

P.O. Box 85518  
Lincoln, NE 68501-5518

ELECTRONIC SERVICE REQUESTED

January 13, 2012

Volume 34 Number 01

[www.processor.com](http://www.processor.com)

Address Changes: (800) 334-7458 or Fax: (402) 479-2193  
Advertising Sales: (800) 247-4880 or Fax: (402) 479-2104

# PROCESSOR<sup>®</sup>

Products, News & Information Data Centers Can Trust. Since 1979

## Applying The Science Of Airflow Management For Bottom Line Value

Upsite Technologies Builds On Its Heritage & Knowledge To Optimize Today's Data Center Efficiencies

**WITHIN UPSITE TECHNOLOGIES' OFFICES** hangs a banner that reads "Optimize." The word represents both the reason Ken Brill founded the company in 2001 and the express purpose of the company today.

On a basic level, Upsite Technologies ([www.upsite.com](http://www.upsite.com)) does this by providing data centers with airflow management products and services. The company's higher purpose, however, is to continually explore and understand the science of airflow management in order to help IT address inefficiencies unique to their data centers. Here, the company can point to its impressive heritage as evidence of its abilities and value to the market.

### A Pioneering Legacy

Prior to founding Upsite Technologies, Brill founded the Uptime Institute ([www.uptimeinstitute.com](http://www.uptimeinstitute.com)) in the early 1990s, creating a think tank dedicated to understanding, improving, educating, and expanding awareness of uptime and optimal efficiencies in data centers. As Lars Strong, Upsite Technologies senior engineer and early Uptime Institute researcher, says, "the work done at the institute essentially gave rise to today's industry of energy-efficient products and services now aimed at improving data center efficiencies." As a spin-off of the Uptime Institute, Upsite Technologies used the experience and knowledge obtained there to create its initial energy-efficiency products and services, including the KoldLok Integral grommet designed to seal cable openings in raised floors.

"There's a lot of education in the industry right now, generating so many suggestions that selecting the right solution may be confusing," Strong says. "Most of these suggestions have a relatively narrow view. The mindset necessary to optimize the data center embraces an awareness of the functioning and configurations unique to every computer room environment. That's where we really add value—our ability to assess and identify the best methodology for optimizing a computer room; not a presentation of why our solution is the best solution in the industry, but rather a study and understanding

of what is going on in the room and the execution of which protocol is necessary to optimize the environment."

Upsite Technologies' current products include a KoldLok family of grommets for raised-floor airflow management/containment; a HotLok family of blanking panels for rack airflow management/containment; and a suite of EnergyLok services consisting of planning, assessment, and cooling support solutions to increase energy efficiency, release stranded capacity, achieve ASHRAE compliance, and reduce associated costs (CAPEX and OPEX). Throughout 2012, the company will introduce numerous customer-inspired and precision-engineered products and services, including HotLok under-rack and

and 3) Enhancing efficiency to positively impact data center operating costs. "That's how Upsite Technologies was started," Strong says, "to support those three objectives."

The company's current efforts involve working directly with its partners and thought leaders to design and engineer new solutions. "We don't only make products; we understand the science," says Erez Borowsky, Upsite's vice president of sales, marketing, and product development.

purchasing big-ticket items that overwhelm, not overcome problems."

Strong says, "What's missing in the industry is support that takes into consideration the unique conditions at every site, an understanding of all the different options that are available and which ones are best to apply." Though basic fundamentals and prerequisites apply to optimizing any room, including sealing raised floors and rack openings, beyond this, the options "become very unique to each



upsite  
technologies<sup>®</sup>

data center and therefore are not limited to a preconceived solution set," he says.

For IT, Upsite's unique heritage and knowledge means the company's products and services are designed and engineered with a comprehensive understanding of electrical and mechanical subsystems, contamination, air cooling science, and operational issues that go into running a data center. "We apply all of that knowledge gained from our heritage to something as basic as and yet as complex as designing the most effective sealing blanking panel on the market," Strong says.

### Applied Science = Valuable Results

According to Borowsky, "Our greatest value to the market is our extensive knowledge and understanding of the data center and the effect of airflow science on efficiencies within the data center. This enables Upsite to design and create precision engineered and effective products that greatly optimize operations allowing our customers to increase efficiencies at a relatively lower cost while increasing the ROI." ■

**Contact:**  
(505) 798-0200 |  
[www.upsitetechologies.com](http://www.upsitetechologies.com)

siderail airflow offerings. In Q1 2012, Upsite will release an AisleLok family of products for aisle airflow management and containment.

### A Renewed Focus

Equally as important as new products is Upsite's renewed focus on its original charter of developing airflow management science and using this knowledge and expertise to assist IT in making improvements in three primary areas: 1) Increasing data center capacity, 2) Improving reliability of IT equipment,

"We share the science and then execute it. That's what sets us apart in the industry. We empower IT."

By working with its partners, Borowsky says Upsite is positioning itself as "the unique resource for understanding and executing airflow management science" in order to provide a turnkey solution. Although other companies may provide technical reports, he says, "typically, the reports correspond to

## Subscribe Today/Address Change Form

PLEASE PRINT

What type of subscription request is this?   ☐ New   ☐ Renewal   ☐ Cancel

Phone: ( \_\_\_\_\_ ) \_\_\_\_\_ Fax: ( \_\_\_\_\_ ) \_\_\_\_\_

Contact Name: \_\_\_\_\_

Company Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Postal Code: \_\_\_\_\_

Country: \_\_\_\_\_

Email: \_\_\_\_\_ Web Address: \_\_\_\_\_

1. What is the size of your company (how many employees)?

- ☐ Less than 10
- ☐ 10 to 99
- ☐ 100 to 199
- ☐ 200 to 499
- ☐ 500 to 999
- ☐ 1,000+

2. How often do you purchase computer hardware/software?

- ☐ Weekly
- ☐ Bi-weekly
- ☐ Monthly
- ☐ Quarterly
- ☐ Annually
- ☐ No Involvement

3. What is your annual computer hardware/software purchasing budget?

- ☐ \$0 to \$9,999
- ☐ \$10,000 to \$24,999
- ☐ \$25,000 to \$49,999
- ☐ \$50,000 to \$99,999
- ☐ \$100,000 to \$249,999
- ☐ \$250,000 to \$499,999
- ☐ \$500,000 to \$999,000
- ☐ \$1,000,000+

For address change, fill out form below with new information and mail or fax.

# PROCESSOR

© Copyright 2012 Sandhills Publishing Company. All rights reserved.

Subscriptions

Mail Form To: P.O. Box 82545 • Lincoln, NE 68501-2545  
Overnight Delivery: 120 West Harvest Drive • Lincoln, NE 68521  
(800) 334-7458 | LOCAL: (402) 479-2132 | FAX: (402) 479-2193

Advertising & Reprints

(800) 247-4880 | (402) 479-2141 | FAX: (402) 479-2104

Editorial Staff

editor@processor.com • (800) 544-1264

Do you have a new product that data center/IT managers would be interested in learning about? Call (800) 544-1264 or email [press@processor.com](mailto:press@processor.com).

Scan this QR Code with your mobile smartphone to see our website.



[www.Processor.com](http://www.Processor.com)

News

### Google Buys More Than 200 Additional Patents From IBM

Google has acquired 222 patents from IBM pertaining to a number of diverse technologies, including server backup, tuning, and recovery; advertising; email management; and e-commerce. This batch of patents will add to the 1,000 IBM patents Google purchased in July 2011 and another 1,000 it purchased in September 2011. Though Google confirmed the latest patent acquisition, the company was not forthcoming with its reasoning for the purchase; however, in light of recent patent litigation against Google, it's likely that the company is acquiring patents in large part to protect itself from future intellectual property lawsuits, although it may also plan to develop some of the patented technologies.

### IBM To Buy Green Hat

IBM announced plans to purchase Green Hat in an effort to enhance IBM's ability to drive software quality and business agility in the enterprise market. Green Hat is a maker of software quality and testing tools that establish a virtual test environment that's designed to automate and simplify the testing of complex systems, such as business process management, messaging, cloud Web services, and service-oriented architecture deployments, without requiring a physical test lab. IBM will integrate Green Hat's products into its Rational Software division, which provides software development and testing tools. Financial terms of the deal were not disclosed, but IBM expects the transaction to be completed by the end of this month, pending regulatory approval.

### Yahoo! Names New CEO

Beleaguered search company Yahoo! has named Scott Thompson, who had been

serving as president of PayPal, as its new CEO following September's ouster of Carol Bartz. Thompson has been with PayPal since 2005, serving as senior vice president and CTO before being appointed president three years ago; prior to PayPal, he worked for Visa subsidiary Inovant, Barclays Global Investors, and consultancy Coopers and Lybrand. He will take over the reins from Yahoo!'s interim CEO Tim Morse, who will return to his post as CFO; Morse took over CEO duties after Bartz was fired due to the company's flagging performance and lack of innovation under her leadership.

### Windows 7 Gains Ground As Windows XP Slides

According to the latest figures from usage share analyst Net Applications, more and more users are jumping ship from Windows XP to Windows 7 as the decade-old WinXP moves closer to losing technical support from Microsoft, which will end in April 2014. WinXP continued its steady months-long slide by falling another 2.4 percentage points from November to December; however, it still makes up for nearly half the operating system market, with 46.5%. WinXP's losses have mostly been Win7's gains, with Win7 climbing from 34.6% of the market in November to 37% in December. Overall, Windows is overwhelmingly

the most widely used operating system; its various flavors account for nearly 92% of the OS market, followed distantly by Mac OS with 5% and Linux with the rest.

### Tablet Shipments Up 256% Year Over Year

Recent stats from NPD DisplaySearch show that 72.7 million tablets shipped in 2011, accounting for 26% of total global shipments of mobile PCs. Tablet shipments grew 256% year over year, compared to 12% growth for notebook PC shipments, with 187.5 million units shipped, and 20% growth for mini-notebook PCs, with shipments of 25.2 million units. Combined shipments of mobile PCs grew 31% year over year, with 285.4 million units shipped in 2011. NPD DisplaySearch analysts predict that tablet shipments will continue to grow rapidly, but that notebooks will remain prominent in the mobile PC market.

of potential ahead for Google+ because of its close integration with other Google offerings, such as Gmail, and its intuitive design—part of which Facebook has mimicked by making its friend lists more like Google+'s circles.

### Microsoft Celebrates As IE6 Drops Below 1%

On the news that the market share of its decade-old Internet Explorer 6 browser had dipped below 1%, Microsoft celebrated with a cake reading "Goodbye IE6!" The company has been working diligently over the past few years to get users and Web developers alike to upgrade to newer, more secure versions of the Internet Explorer browser, such as IE8 or IE9, but a number of Web developers have been hesitant to upgrade out of concern that their sites would no longer be accessible to users operating older versions of the browser. Now, as Microsoft prepares to release IE10, the company is thrilled to learn from Net Applications that IE6 accounts for a mere 0.94% of browser usage.

### Google In Hot Water Over Ad Controversy

Google is scrambling to distance itself from a number of sponsored posts that actually violate the company's own advertising rules. The blog posts were brought to light by search marketing blogs SEO Book and Search Engine Land, who noted that while the posts' identification of Google as their sponsor is not out of line, the fact that the posts linked back to Google, which in turn boosted its PageRank ranking, runs afoul of the company's rule that states "Buying or selling links that pass PageRank is in violation of Google's Webmaster Guidelines and can negatively impact a site's ranking in search results." Google does offer an acceptable path for paid links, requiring that they include rel="nofollow" in the anchor tag. For its part, Google is insisting that it did not ask for the posts that are in violation of the rules and that it consistently avoids paid sponsorships for this very reason.

### Engineers Arrested For Selling Intel Chips On eBay

Four engineers in Taoyuan, Taiwan, have been arrested under allegations of selling test samples of Intel CPUs on eBay for their own financial gain. Taiwan's Criminal Investigation Bureau has been on the hunt for the four suspects since September; in fact, the CIB raided the suspects' homes in December and confiscated 178 Intel CPU samples, estimated to be worth \$82,500. The suspects have admitted to selling more than 500 Intel sample CPUs since 2009, though it was not released how much the individuals have profited from the sales. The suspects worked for Intel OEMs in Taiwan and were likely working against non-disclosure or confidentiality agreements. The CIB says the suspects could face up to five years in jail if convicted.

### Google+ Ends 2011 On A Positive Note

Though initial reactions were mixed following its release, Google+ finished out 2011 with more than 62 million users, according to researcher Paul Allen; similarly, analytics firm Experian Hitwise estimates that the social networking site saw a 55% increase in traffic from November to December, with 49 million U.S. visitors throughout the month of December. The fledgling site still lags behind social networking behemoth Facebook, which currently boasts about 800 million users worldwide, but analysts see a lot

## WATCH THE STOCKS

This information provides a quick glimpse of current and historical stock prices and trends for 13 major companies in the technology market.

| Company          | Symbol | Year Ago | Dec. 22 \$ | Jan. 5 \$ | % change from previous issue |
|------------------|--------|----------|------------|-----------|------------------------------|
| AMD              | AMD    | \$8.69   | \$5.45     | \$5.46    | ▲ 0.18%                      |
| Apple            | AAPL   | \$333.73 | \$398.55   | \$418.03  | ▲ 4.89%                      |
| CA Technologies  | CA     | \$24.72  | \$20.25    | \$20.31   | ▲ 0.3%                       |
| Cisco Systems    | CSCO   | \$20.95  | \$18.13    | \$18.92   | ▲ 4.36%                      |
| Dell             | DELL   | \$14.26  | \$14.77    | \$15.17   | ▲ 2.71%                      |
| Google           | GOOG   | \$613.50 | \$629.70   | \$659.01  | ▲ 4.65%                      |
| HP               | HPQ    | \$44.88  | \$25.86    | \$26.50   | ▲ 2.47%                      |
| IBM              | IBM    | \$148.66 | \$182.04   | \$184.66  | ▲ 1.44%                      |
| Intel            | INTC   | \$20.77  | \$24.02    | \$25.40   | ▲ 5.75%                      |
| LinkedIn         | LNKD   | n/a      | \$63.90    | \$64.13   | ▲ 0.36%                      |
| Microsoft        | MSFT   | \$28.82  | \$25.81    | \$27.68   | ▲ 7.25%                      |
| Oracle           | ORCL   | \$31.17  | \$25.69    | \$26.59   | ▲ 3.5%                       |
| Red Hat Software | RHT    | \$46.25  | \$40.81    | \$42.70   | ▲ 4.63%                      |
| Symantec         | SYMC   | \$17.69  | \$15.56    | \$15.80   | ▲ 1.54%                      |

NOTE: This information is meant for reference only and should not be used as a basis for buy/sell decisions.



SUPERMICR<sup>®</sup>

# 8/4-Way

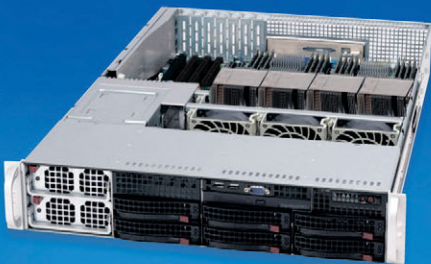
M P S E R V E R S O L U T I O N S

- Intel® Xeon® Processors E7-8800/4800 Family/(10-Core) and 7500 Series (8-Core) Supported
- Intel® 7500 Chipset and 7510 Scalable Memory Buffers
- Supports up to 2TB\* ECC Reg. DDR3 in 64 DIMMs
- Onboard 6Gb/s SAS (SAS 2.0) with hardware RAID (option)
- Up to 2800W Redundant Gold Level High-Efficiency Power Supplies with I<sup>2</sup>C & PMBus
- Integrated IPMI 2.0 Management + KVM with dedicated LAN
- Up to 10x PCI-E 2.0 slots for GPU application
- Dual LAN with Intel® 82576 Gigabit Ethernet Controller

\*Please Check "Tested Memory List" on Supermicro website for compatibility



1U SYS-8016B-6F / TF  
4-Way System



2U SYS-8026B-6RF / TRF  
4-Way System



4U SYS-8046B-6RF / TRF  
4-Way System



SuperServer® 5086B-TRF  
8-Way 5U  
80 Cores/2TB SuperServer®



[http://www.supermicro.com/Xeon\\_mp/](http://www.supermicro.com/Xeon_mp/)

© Super Micro Computer, Inc. Specifications subject to change without notice.  
Intel®, the Intel® logo, Xeon®, and Xeon® inside, are trademarks or registered trademarks of Intel Corporation in the US and other countries.  
All other brands and names are the property of their respective owners.





# STATS & FACTS

PROVIDING THE LATEST INSIGHT & INFORMATION FROM LEADING RESEARCH FIRMS

A Look At

## The IT Job Market

As we head into 2012, a lot of focus will undoubtedly be put on how the job market continues to rebound following the economic downturn. Here is a look at analysts' hiring predictions and expectations for pay in the IT sector.

### IT Hiring To Increase Modestly In 2012

According to a recent survey from Robert Half Technology, 2012 will see the biggest net increase in IT hiring in the past eight quarters, though it's still well below pre-recession hiring levels. Specifically, 20% of the 1,400 CIOs surveyed said they expect to increase their headcount during the year, while 10% said they expected to cut back, resulting in a 10% net gain. Other Robert Half findings:

- Network administration skills are in highest demand, with 57% of those surveyed saying they were in search of workers possessing those skills.
- 56% said they were looking for workers with Windows administration and desktop support skills.
- The retail industry is expected to do the most hiring, with 17% of respondents from retailers saying they plan to hire IT personnel. Next on the list was the manufacturing industry, with 11% planning to hire IT workers.

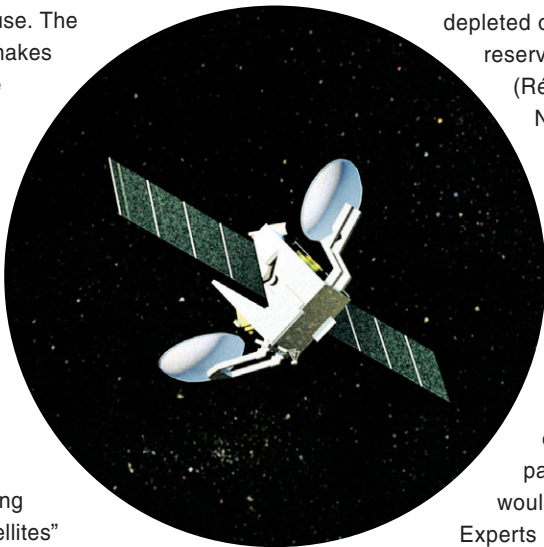
### Premium Pay For Certified IT Workers Slides As Business Skills Gain Importance

Despite the uptick in IT hiring, researchers from Foote Partners recently found that the premium pay for certified IT jobs is lower than it has been in 12 years. Foote researchers surveyed 2,200 employers in the IT market and found that IT certifications are losing their importance as more emphasis is being given to business skills rather than technical skills—experience gained on the job and business savvy is becoming increasingly important in today's market, and those are not skills that can be taught.

- Premium pay for jobs with entry-level and training certifications went down 6.4% from the quarter ending in July to the quarter ending in October.
- Pay for workers with Web development certifications went down 5.3% from quarter to quarter.
- Conversely, pay for noncertified operating system skills increased 9.4%.

### DARPA To Repurpose Retired Satellites

DARPA (the Defense Advanced Research Projects Agency) recently announced its Phoenix program, through which it hopes to repurpose \$300 billion worth of retired satellites currently sitting in geostationary orbit to create a new communications system for military use. The satellites' position makes them ideal for reuse because of their large radio frequency apertures, which can cover large swaths of the earth's surface, DARPA says. The program will award \$36 million to contractors to repurpose some 1,300 satellites by launching so-called "nano satellites" that will attach to the antennas of the non-functional satellites to create a new communication system. The agency hopes to have at least one successfully repurposed satellite to demonstrate by 2016; it also has a number of other programs in the works to make use of unused satellites in orbit.



### Watson Supercomputer To Help In Cancer Research

Watson, IBM's supercomputer that competed on the game show Jeopardy! last year, is now helping the Cedars-Sinai Samuel L. Oschin Comprehensive Cancer Institute to analyze large amounts of data in an effort to better evaluate cancer treatment options. WellPoint is partnering with IBM to provide oncologists with the latest medical evidence from individual cases or treatments not yet widespread. With Watson's ability to process huge amounts of data in a very short period of time, the parties involved hope to increase medical professionals' understanding of the newest, most advanced findings in cancer research. WellPoint says the complexity of the disease is why they are first using the supercomputer to analyze this particular data.

### U.S. Military Targeted In Phishing Attack

According to an article posted on the U.S. Army's site, the military has been targeted by an email phishing scam in which active military personnel, family members, and veterans have been targeted. Although the emails appear to be from a military official or agency, once opened they contain malicious links that either download files corrupting the user's computer or direct the user to a dangerous site prompting for sensitive information. The harmful software in this attack is typically a Trojan horse, used to destroy a network, or data-mining software, used to gain a user's private data. The military is urging all personnel and associated persons to be especially wary of any unsolicited email, even if it appears to come from a legitimate source.

### Federal Health IT Spending To Rise

Although many federal agencies are attempting to cut budgets in 2012, the overall spending on federal health IT will increase at a rate of about 7.5% per year to an estimated \$6.5 billion in 2016, according to a GovWin report. Federal health IT spending in 2011 totaled \$4.5 billion. According to the study, the desire for better healthcare and optimal outcomes is driving the demand for advanced technology in the healthcare sector. Along with various technological advances, the aging population, increased healthcare costs, and high unemployment rates will contribute to the rising federal healthcare expenditures over the next several years.

### Enterprises Have Time To Prepare For IPv6

Despite some worry surrounding the move from IPv4 to IPv6 Internet addresses, networking experts say that 2012 will offer the time needed for enterprises to make the transition. In April 2011, APNIC (Asia-Pacific Network Information Centre) was depleted of its IPv4 address reserves, and RIPE NCC (Réseaux IP Européens Network Coordination Centre) will likely allocate all of its addresses by the middle of this year. RIPE strengthened its rules regarding attaining an IPv4 address to prevent hoarding of Web addresses or panic that the numbers would dwindle too quickly. Experts expect that transitional techniques will enable the two systems to coexist without problem for some time, but urge enterprises to prepare for the switch this year.

### China Expands Data Center Reach

As China is experiencing a surge in its online population, reaching an estimated 500 million users, the country is building data centers at a swift pace, and the Chinese government has announced an expansion of the nation's computing infrastructure as part of its five-year goal. American companies such as HP and IBM are taking advantage of the increased need for data centers in the country, providing training and planning expertise. The data center build-out was strongly influenced by telecom providers and a push for services such as e-commerce, online banking, and e-government.

### Browser Shares Reviewed At End Of 2011

According to Net Applications, Internet Explorer is continuing to lose share in the browser market. The firm announced that Microsoft's leading browser fell from 52.6% to 51.9% share in the last two months of 2011. Older versions of IE still hold on to a significant portion of IE's total share of the market; IE9, the most recent version, only accounts for 11.5% of the market. Chrome is continuing to gain market share, ending 2011 with 19.1% of the browser market (up from 18.2% in November). Firefox slightly lost market share, falling to 21.8% at the end of the year after holding 22.1% in November. Net Applications also reviewed mobile browsers, finding that Apple's Safari holds more than half of the mobile browsing market at 53.3%.

### Google Is No. 1 Web Site Of 2011 In Nielsen Rankings

Nielsen released its list of the top Web sites of 2011, which ranks Google as the most visited site in the United States. Google can claim an average of 153.4 million unique visitors to its site each month. Following the search giant at No. 2 is Facebook with an average of 137.6 million unique visitors per month. Facebook was by far the winner for the top social network or blog in Nielsen's ratings, with more than triple the number of visitors than the No. 2 social Web brand, Blogger. Yahoo! took third place; Microsoft sites, including MSN, WindowsLive, and Bing, took the fourth slot; and YouTube ranks fifth with just over 106,000 unique visitors each month. YouTube also ranked first for the top online destination for video in Nielsen's list. Microsoft, AOL Media Network, Wikipedia, Apple, and Ask Search Network round out the top 10 Web brands visited last year.



Deloitte Buys Ubermind

Deloitte announced that it will acquire enterprise tech company Ubermind in hopes of strengthening Deloitte's offerings for industry-specific mobile applications. Ubermind is based in Seattle, employs about 200 employees, and boasts big-name clients including Target and AllRecipes. The companies plan to fuse the technologies to develop new interaction models with customers and employees. Ubermind's founder and CEO are both joining Deloitte as principals. Financial details of the acquisition were not released.



Holiday Online Spending Up 15%

According to data collected by comScore, customers spent \$35.3 billion online during the 2011 holiday season, up 15% from 2010's spending figures, which marks a new record for holiday online spending. Spending for the week ending Dec. 25 in particular was up 16% year over year to \$2.8 billion, which comScore's analysts attributed in large part to consumers using gift certificates received at Christmas to buy content for their e-readers and tablets. Cyber Monday spending reached \$1.3 billion, up 22% from the \$1 billion spent in 2010.

Quanta Sues AMD

Quanta has filed a lawsuit against AMD, claiming the chip maker sold faulty chips that would malfunction once installed in its NEC laptops. According to Taiwan-based Quanta, the AMD chips could not withstand the laptop's thermal processes and would cause the computer to fail. Although AMD denies the allegations, Quanta is claiming the chips caused injury to revenue and profits. An AMD spokesperson said the company is not aware of any similar complaints related to the chip in question—which has since been discontinued—and pointed out that Quanta used the same chip in other computer platforms without issue.

Internap Acquires Voxel

Internap recently acquired Voxel Holdings in a deal worth \$30 million. Internap, which specializes in cloud and IT infrastructure, is now set to increase its market share in the cloud sector after snapping up its onetime competitor. Voxel has about 1,000 customers using its services, which include cloud solutions, dedicated hosting, and automation services. Voxel is based in New York with locations across North America, as well as locations in Amsterdam and Singapore. Internap's acquisition will likely give the company a stronger foothold in the global

market, possibly attracting new clients in Europe, the Middle East, Africa, and Asia Pacific regions.

Smarter Devices Drive BI Demand

Traditionally a staple of the deskbound professional, business intelligence software is gaining traction in the mobile device space as more and more enterprise workers turn to increasingly intelligent smartphones and tablets to do their day-to-day work; in fact, predictions from Gartner show that 33% of BI functions will be consumed by mobile devices by 2013. Most BI vendors already offer some sort of mobile device capability with their offerings, but the push toward using mobile devices as a primary means of access is prompting BI vendors to offer mobile solutions with more capabilities and compatibility options.

Android, iOS Activations Increase Sharply Over The Holidays

Mobile application analysis firm Flurry says that activations of Google Android and Apple iOS devices over the holidays in 2011 trounced records from previous years, with a combined estimate of 6.8 million devices activated on Christmas day alone. Activations were up about 142% from 2010, according to Flurry; 2010 set a single-day record of 2.8 million activations on Christmas. The 6.8 million number from the Christmas holiday also crushed activations throughout the first 20 days of December, increasing 353% over the 1.5 million devices activated during that time. Flurry also estimates that 242 million apps were downloaded on Christmas day.

Windows Phone Marketplace Apps Cross 50,000 Mark

In what may be a good sign for Microsoft's mobile operating system, the Windows Phone Marketplace has reportedly reached 50,000 published applications and games available for download. The milestone signifies that Microsoft's mobile OS may be gaining some ground with third-party developers, although the Windows Phone Marketplace still lags far behind its Android and iPhone competitors with application availability. Currently, Apple's App Store and Google's Android Market both have more than 500,000 applications available for download—10 times what's available in Microsoft's market. More than 17,000 of those 50,000 apps were added in the past quarter, with more than 8,000 of those coming at the tail end of the year. Microsoft's Windows Phone OS holds slightly more than 5% of the smartphone market.

Nuance To Buy Vlingo

Nuance Communications announced it will acquire Vlingo, a maker of mobile speech recognition software. The companies have been rivals in this space, previously fighting patent battles against one another. The acquisition will help to bolster Nuance's own natural language interfaces, providing a system that will respond to spoken words and actions made by the user. Vlingo software is currently used in some Android devices, and such technology is expected to expand, as top competitor Apple released its highly successful Siri voice recognition software in its latest iPhone models. Although details of the purchase were not released, Nuance shares rose 7% after the announcement—the biggest increase since early October.

President Nominates Cybersecurity Board Members

U.S. Cybersecurity Coordinator Howard Schmidt announced that President Obama nominated three individuals to fill empty positions in the government's Civil Liberties and Privacy Oversight Board. The board

was created after 9/11 and serves to monitor the federal government's cybersecurity and counterterrorism efforts. The nominations await approval from Congress before the board is operational; David Medine, a partner at WilmerHale law firm, would be appointed as chairman of the board, while Rachel Brand, lawyer and chief counsel at the U.S. Chamber of Commerce, and Patricia Wald, former U.S. Court of Appeals judge, would serve as board members.

FCC Approves AT&T Spectrum Buy

After the Federal Communications Commission blocked AT&T's proposed acquisition of T-Mobile, the organization recently approved a smaller proposal from the company. AT&T completed its purchase of wireless spectrum from Qualcomm, in a deal totaling \$1.9 billion. In the deal, the telecommunications giant will gain 6MHz of spectrum nationwide and 6MHz in major metropolitan areas including New York, Boston, Los Angeles, San Francisco, and Philadelphia. AT&T's added spectrum will cover 300 million individuals nationwide. The FCC will require the company to not interfere with adjacent frequencies or hinder inter-carrier roaming.

RightNow Approves Oracle Purchase Offer

Oracle is set to buy RightNow Technologies for \$1.5 billion, or about \$43 per share. After first announcing the merger plans in October, nearly all of RightNow's shareholders recently approved the acquisition, with 99.8% of those voting in favor of the merger. RightNow specializes in cloud-based applications involving customer service; the merger will likely boost Oracle's own customer experience management software offerings. Although the merger will need regulatory approval before being finalized, the companies expect the acquisition to be completed early this year.

Xerox Lab Founder Dies

Xerox's chief scientist and founder of the Palo Alto Research Center Jacob Goldman died in December at the age of 90. According to Goldman's son, he died of congestive heart failure. The physicist was heavily involved in the technology research that led to the first personal computers. Technologies developed at the research center were later commercialized by tech giants Microsoft and Apple. He began his tenure at Xerox in 1968 as vice president of research and development, having previously worked for the Ford Motor Company. In retirement, Goldman privately invested in various companies and served on Xerox's board.

Akamai Buys Cotendo

Akamai Technologies announced it is purchasing Cotendo, a cloud technology provider, for \$268 million in cash. Cotendo technologies will likely help Akamai deliver speedier enterprise cloud services, including more application accessibility on mobile devices. Cotendo employs about 150 employees in both California and Israel; however, the company did not announce specifics on staffing changes or how the two companies would integrate its technology and product



offerings. This is Akamai's 10th (and second largest) acquisition since the company's start in 1998; the deal is expected to close early this year.

Congress Approves Funding For Exascale Computing

Congress recently approved funding for an exascale computer after the U.S. Department of Energy requested \$126 million for the research and development of the supercomputer. The exascale computer would be three orders of magnitude more power than the most powerful computer currently in existence, processing 1 million trillion calculations each second. The U.S. House and Senate both approved the bill, which will provide \$442 million total to scientific computing research (with the requested \$126 million specifically designated for exascale computing). The bill awaits the President's approval but is expected to be signed into law. The development of an exascale supercomputer will be a long-term goal, as the previous supercomputer advancement (from terascale to petascale) took about 12 years.

LCD Manufacturers Pay For Price-Fixing Scheme

After authorities in the United States, Japan, Korea, and the European Union investigated an alleged price-fixing scheme among several top LCD manufacturers, companies and individual executives involved have been found guilty and subject to millions of dollars in fines. LCD manufacturers involved include Samsung Electronics, Sharp, and five others, all of which recently agreed to pay about \$553 million in settlement claims to consumers and eight U.S. states. Samsung will pay the most—\$240 million to settle the civil fines and penalty law claims. Sharp will pay \$115.5 million, Chimei Innolux will pay \$110.3 million, Hitachi Displays will pay \$39 million, and HannStar Display will pay \$25.7 million. The other two companies, Chunghwa Picture Tubes and Epson Imaging Devices, will pay \$5.3 million and \$2.9 million, respectively.

Delay On Approval Of The Stop Online Piracy Act

The controversial Stop Online Piracy Act, or SOPA, has been delayed and will not reach the U.S. House of Representatives as early as expected. The bill was introduced in October and aims to stop copyright infringement on the Web, specifically illegal downloads of digital content such as music, films, and television programming. Several amendments have already been proposed, and the markup process must be completed before approving the bill. The act would require search engines and providers to disallow service to the infringing sites. Google opposes the bill, calling it an "online Armageddon." The House is expected to return to the bill in early 2012.

Sony Sells Its Share In S-LCD To Samsung

Sony announced that it will sell its share of the company's joint LCD venture with Samsung Electronics, S-LCD, to Samsung for about \$934 million. In the agreement, Samsung will acquire all of Sony's shares and will continue to supply Sony with panels for its televisions at fair market prices. Although the company expects to post a loss of about \$847 million in the third quarter, the trade will help Sony as it struggles to maintain a hold in the television market. The company said it will continue to produce televisions but will eliminate the costs associated with operating a factory—an estimated \$642 million savings per year, according to Sony.



PHOTO LISTINGS

The *Processor* Photo Listings section includes brief overviews of data center products. All products listed have been released recently, so use this section to get up to date with what's new on the market and to find products you need.

Manufacturers:

Do you have a new product that data center/IT managers would be interested in learning about?

Send your press release or product information to [press@processor.com](mailto:press@processor.com).

MILTON SECURITY GROUP USBINFORMER

**Control USB Port Access!** USBInformer provides USB port security on endpoints. Using a real time security monitoring service, the USBInformer client stops access to any USB device not approved by administrators. The web portal of USBInformer allows administrators to remotely grant or reject user access to new and existing USB devices. USBInformer provides granular control over USB ports by computer, user, and USB Device ID. Every device plugged in to a monitored computer is recorded and sent back to the administrator portal. Administrators are then able to review which users attempted to plug in unauthorized devices.



(888) 674-9001 | [www.miltonsecurity.com](http://www.miltonsecurity.com)

RACKMOUNT SOLUTIONS 42U & 24U - 4 POST SERVER RACK

Rackmount Solutions introduced the 42U and 24U - 4 Post Server Rack. The 4 post server rack has been designed with a strong "L" shaped square rackrail, the most versatile on the market. It is ideal for all rackmount servers, KVM switches, network equipment, etc. Unlike other server racks, the Rackmount Solutions 42U and 24U - 4 Post Server rack includes a base and adjustable rails that can adjust from 21.2" to 35"d which adds 8" for base plates. The server rack also includes one free set of adjustable angle brackets which are ideal for heavy items needing extra support.



(866) 207-6631 | [www.rackmountsolutions.net](http://www.rackmountsolutions.net)

1102 GRAND – INTERNET HUB & COLOCATION FACILITY

Bootstrapping startups to Inc. 500 and Fortune 500 companies count on us every single day for their colocation or data center operations. Find out what they already know and experience the 1102 GRAND difference!



- 1/2, full cabinets, cages, and raw space for data centers
- 30+ carriers/Internet providers
  - 10 Meg Internet as low as \$55 per month
  - 100 Meg Internet as low as \$200 per month
  - Full GigE Internet as low as \$1,000 per month
- Dual electric utility power feeds, redundant UPS battery backup, backup diesel generator service, redundant cooling units, and more
- Fractional/private technical offices

(816) 471-7872 | [www.1102grand.com](http://www.1102grand.com)

iXSYSTEMS TRUENAS™ PRO STORAGE APPLIANCE

iXsystems recently introduced the TrueNAS™ Pro Storage Appliance. With a rock-solid FreeBSD® base, ZFS support, and a powerful Web GUI, the TrueNAS™ Pro (formerly "FreeNAS™ Pro") 2U Appliance pairs easy-to-manage FreeNAS™ software with world-class hardware and support for an unbeatable storage solution. In order to achieve maximum performance, the TrueNAS™ Pro 2U System supports Fusion-io's flash memory cards and 10 GbE network cards. Paired with optional JBOD expansion units, the TrueNAS™ Pro System offers excellent capacity at an affordable price. For more information, visit <http://www.ixsystems.com/TrueNAS>.



(855) GREP-4-IX | [www.ixsystems.com](http://www.ixsystems.com)

ONRAMP DATA CENTER FULL7LAYER SUPPORT

OnRamp's Data Center services are backed by our **Full7Layer Support**. OnRamp's engineers are available 24/7/365 to provide support where you will most likely need it: inside your rack. Other Data Center companies like to talk about support, but actually provide very little in the way of real, hands-on help. OnRamp is different. While our engineers regularly perform tape swaps and server reboots, they have the expertise and capability to support customers all the way through the application layer, going above and beyond routine requests. In fact, many customers view OnRamp as an extension of their IT department, and choose to supplement their technical expertise, enhance their service, or seek on-demand support in emergencies with the help of OnRamp's Full7Layer Support.



(512) 322-9200 | [www.onr.com/processor](http://www.onr.com/processor)

JETNAS NAS, iSCSI, FC STORAGE APPLIANCES

JETNAS provides a full range of NAS, iSCSI, FC storage solutions in different form factors from 1U to 4U rack-mounts and Towers to meet your business needs and to secure your critical data. Our JETNAS appliances combine high density storage capacity and advanced redundancy, scalability, availability, and management functionality.

- Hardware RAID with SAS2, SATA3 Enterprise drives
- Scalable up to 720TB with additional JBOD units
- 4 X 10 Gigabit Ethernet, Network bonding supported
- VMware, Xen, Microsoft Hyper-V compatible
- No additional cost for clients and capacity expansion



(888) 227-2926 | [www.JETNAS.com](http://www.JETNAS.com)

PDU CABLES™ UL LISTED POWER DISTRIBUTION CABLES

Experience why thousands of data centers have made PDU Cables their preferred choice.

**PDU Cables** - the industry's leading UL Listed and labeled power whips. Engineered to the highest quality level, controlled environment manufactured with industrial grade components and factory tested for unequalled safety and reliability. Offering hundreds of custom cable configurations to suit every application, our trained technical staff can assist you in every way.

**PDU Cables provide a complete pre-fabricated PDU cable assembly solution to ensure the highest reliability for your data center environment.**



(866) 631-4238 | [www.pducables.com](http://www.pducables.com)

LINDY USB PORT BLOCKER

System administrators can physically prevent users from connecting Pen Drives, MP3 Players and other USB Mass Storage Devices to their computers to copy data, introduce viruses, etc. The USB Port Blocker is a combined 'key' and 'lock' assembly which plugs into the USB port. Simply plug the 'keylock' into the port and release the latch - the lock remains in place! Plug the key back into the lock to remove. Easy!

- Physically blocks access to a USB port
- Consists of 4 locks and 1 key
- 5 different color code versions available: Pink, Green, Blue, Orange, White



(888)-865-4639 | [www.lindy-usa.com/](http://www.lindy-usa.com/)

NORDSTAR GROUP

NordStar Group (NSG) is one of the nation's leading sources for New, Refurbished, Legacy and Green Products. The companies extensive partner list includes HP, Sun/Oracle, IBM, Dell, Cisco, Juniper, VMWare, SonicWall and other Tier 1 manufacturers and software providers. NSG's hardware portfolio includes Servers, Workstations, Storage and Networking Equipment. NSG is a comprehensive solutions provider offering not only hardware and components, but full implementation and IT solutions. NSG can provide System Design Configurations, Installation, End of Life Products and Asset Recovery.



(832) 467-0000 | [www.nordstargroup.com](http://www.nordstargroup.com)

BURK TECHNOLOGY CLIMATE GUARD LT

Climate Guard LT from Burk Technology is designed to prevent disasters and warn you if conditions are right for one to occur. Climate Guard LT is a highly customizable environmental monitoring solution that provides you with climate data and alerts. The base model is equipped with temperature, light, and sound sensors, but with its eight extra inputs, you can connect sensors that will detect humidity, power, floods and leaks, smoke, motion, and door contact. The right combination of built-in and additional optional sensors ensures that your data center infrastructure will be protected from both natural occurrences and human error. Burk Technology's Climate Guard LT can be customized to fit all of your needs, protecting you from potentially costly climate-based problems. Not every data center is the same, so there may not be a one-size-fits-all solution for environmental monitoring.



(800) 255-8090 | [www.burk.com](http://www.burk.com)

DMD SYSTEMS RECOVERY DATA CALL CENTER EQUIPMENT DEINSTALLATION

Properly disposing of outdated computer equipment is a real hassle. At DMD, we make it easy. By offering a host of free services, we allow you to turn over your underutilized equipment without having to worry about compliance, earth-friendliness, or even getting a fair market price. DMD will package, transport, and audit your equipment free of charge. We'll even provide an energy savings audit free of charge. However, all of these free services don't mean that you will get charged with environmental cleanup issues later. Each step in this process is documented, providing our customers with a serial number based Certificate of Transfer and Certificate of EPA Compliance for each asset.



(866) 999-5704 | [www.dmdsystems.com](http://www.dmdsystems.com)



CORELINK DATA CENTERS  
HOSTING & MANAGED SERVICES

Eliminate system downtime and ensure availability of critical IT infrastructure.

- CoreLink Data Centers provides small, medium, and enterprise companies with top-tier, highly secure, environmentally controlled facilities with multiple layers of redundancy.
- Get a carrier-neutral data center that is reliable, scalable and secure.
- Services include hosting, managed security, managed data, business continuity, and disaster recovery.



SQUARECARE  
MISSION CRITICAL FLOOR CLEANING

Your “Mission Critical” area needs proper attention to support the backbone of today’s business. Our staff is well trained by industry leaders; your requested process followed to the letter; and our green cleaning techniques assure low voc invasion, vital dust retrieval and reduced concrete salts sloughing into these critical areas.

Technicians have completed an extensive training program offering green cleaning services for Data/Access flooring both above and below the surface. We selected this service as a compliment to our current offering because it requires the same attention to detail; the thoughtful planning of the job; and deliberate execution to protect your investment. Rest assured we are carefully working while you are resting for the next day.



METRIC SYSTEMS CORPORATION  
THE RHINO BOX® COMMUNICATIONS SHELTER

The Rhino Box communications shelter is engineered from the ground up to protect commercial and industrial grade equipment in harsh environmental conditions enabling deployment and operation of communications and IT equipment nearly anywhere at any time.



- Standard Features and Capabilities:
- Available in 9U to 21U sizes
  - Support for RF and Wireless Systems
  - External Temperature Range: -30°F to 160°F
  - AC, DC or AC/DC Redundant Operation
  - Supports Equipment Payload Weights to 300 lbs.
  - Heavy Duty Shock and Vibration Protection
  - Internal Fail-Safe Temperature Control System

(800) 549-7421 | [info@metricsystems.com](mailto:info@metricsystems.com)

CHENBRO RM137  
1U HOT-SWAP SERVER CHASSIS

The RM137 server chassis is designed to address the demand of cloud data centers and is an ideal solution for computing intensity applications. It supports up to a 13.68 x 13-inch motherboard and 1U redundant PSU. The 6Gb/s SATA backplane and advanced fan anti-vibration mechanism help enhance hard drive read/write performance. With a built-in info tag, the RM137 can be easily recognized by the system administrator.



- Supports 1U single and 1+1 redundant PSU (via optional kit)
- 2-bay (RM13702) and 4-bay (RM13704) 3.5” HDD configuration in one chassis

(909) 947-3200 | [www.chenbro.com](http://www.chenbro.com)

CABLES FOR LESS  
CUSTOM CABLE CALCULATORS

At Cables for Less, our custom cable calculators were designed to be a simple way for you to order exactly what you need for your specific application. Most of the time, standard Fiber Optic Cables can fit the bill, but we understand that sometimes you need a 24 foot cable, instead of the stock 10 meter cable, and so forth. Our goal is to make sure that you are completely satisfied, with not only the options we present, but also the quality of the product we sell.



Do not hesitate to contact your personal Fiber Sales Representative with questions at 800-273-9556.

(800) 273-9556 | [www.CablesForLess.com](http://www.CablesForLess.com)

MOVINCOOL CM25  
CEILING-MOUNTED SERVER ROOM AIR CONDITIONER

Based on breakthrough engineering technology, the MovinCool CM25 ceiling-mounted server room air conditioner offers a combination of features and benefits simply unavailable elsewhere on the market today. Unlike a traditional fan coil unit, the MovinCool CM25 offers a totally self-contained unit that is perfect for server rooms and other tight spaces.

- 25,000 Btu/h cooling capacity
- Environmentally-friendly design - 14 SEER, variable-speed compressor, R410A refrigerant & RoHS compliant
- Compact, self-contained unit is easy to install
- Wall mount controller offers advanced programmability and settings
- High sensible cooling – ideal for server rooms

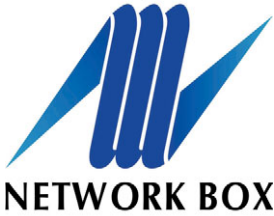


(800) 264-9573 | [www.movincool.com](http://www.movincool.com)

NETWORK BOX USA  
Z-SCAN

**Z-Scan from Network Box is revolutionizing how organizations deal with Internet-based security threats.**

Traditional antivirus technologies focus on recognizing the threat, identifying it and then stopping it. The entire process can take between 4-12 hours. Hackers know this and are taking advantage of it by flooding the Internet with at least 40,000 new pieces of malware per day. Z-Scan takes an entirely new approach based on statistical observations – creating/releasing signatures are fully automated, reducing the cycle to just seconds. And Z-Scan can respond to certain types of spam in seconds, instead of several hours typical in the Internet security industry.



(832) 242-5758 | [www.networkboxusa.com](http://www.networkboxusa.com)

DUSTSHIELD™  
PROTECT MISSION CRITICAL HARDWARE

**Prevent electronic failure and downtime due to:**

- Abrasive airborne particles, dust and fibers
- Atomized/aerosol liquids and oils
- Particle damaged equipment
- Dust induced CPU fire & Component heat damage



NEMA rated protection for all performance environments: computers, thin clients, printers, label makers, monitors, touch screens & more.

**Use PROMO CODE PRO2012 for 10% off your first order.** Reseller inquiries are welcome.

(800) 587-9557 | [www.dustshield.com](http://www.dustshield.com)

FIKE’S ECARO-25®  
CLEAN AGENT FIRE SUPPRESSION

Fike’s ECARO-25 clean agent with Impulse Technology is the best way to suppress fires and protect your high-value assets and business continuity. ECARO-25 features the unique fire extinguishing agent FE-25™ by DuPont™, which absorbs heat energy at its molecular level faster than the heat can be generated, so the fire cannot sustain itself.

Features of ECARO-25 include:

- Zero Ozone Depleting Potential (ODP)
- Environmentally Safe
- Electrically Non-Conductive
- Colorless and Odorless
- Leaves No Residue
- For use in Occupied and Unoccupied Spaces
- No Overpressurization Concerns



(866) 758-6004 | [www.fike.com/products/fsecaro.asp](http://www.fike.com/products/fsecaro.asp)

DOT HILL SYSTEMS  
ASSURED SAN ARRAY

Smart. Simple.Storage.The AssuredSAN™ RAID arrays combine high performance and high capacity storage with the simple RAIDar™ management GUI. The 3000 Series offers many exciting features that protect data, save energy, and provide even higher levels of responsiveness, all at affordable price for cost-conscious IT managers. A single array can store up to 36 terabytes and expands easily with JBOD units.



The 3000 Series HA features include dual controllers, fans and power, and hot swappable drives to maximize availability. Models for 8Gb Fibre Channel and 10Gb iSCSI infrastructures are available.

(800) 872-2783 ext. 3575 | [www.dothill.com](http://www.dothill.com)

PINPOINT NETWORK SOLUTIONS  
TRANSPORT SERVICES

Pinpoint’s Transport service provides both SONET and IP based services on our DWDM-enabled network stretching from Denver to Chicago and Chicago to New Orleans, as well as connectivity through national carrier interconnection. Optical SONET/IP services from OC-3/FE to OC-192/GigE (ring protected) are available in the U.S. and abroad. We also offer long haul, dark fiber services for high bandwidth, mission critical applications. Through our wireless network, Pinpoint can offer TDM connectivity throughout the central United States. The Pinpoint NOC monitors our entire network, including Collo and POP’s, on a 7x24x365 basis.



(866) 500-6924 | [www.pnptnetworks.com](http://www.pnptnetworks.com)

PROCESSOR

Subscribe Today!

Call (800) 334-7458

Subscribe Online!

Go to [www.processor.com](http://www.processor.com)





CASE STUDY

# Leveraging SSDs For Cloud Computing

OCZ's Deneva 2 SSDs Help Optimize PSSC Labs Servers For The Cloud

WHEN PSSC LABS, a manufacturer that has been building high-quality servers, storage units, software solutions, and more since 1992, decided to enter the cloud computing arena, the company knew it would need to invest in the fastest and most reliable components available. "We live in a world where people need the latest and greatest in technology," says Alex Lesser, vice president of sales and marketing at PSSC Labs. "Our recent push into the cloud computing and Web 2.0 spaces requires our computing solutions to offer the absolute highest I/Os at an affordable price."

Because cloud computing can be used in multiple ways by companies in different industries, PSSC Labs researched the best types of storage options to use in its servers and other products in order to provide a solid experience for its customers. The company knew it needed to reach a certain performance standard in terms of speed, reliability, and price. PSSC Labs eventually chose Enterprise-Class Deneva 2 SSDs from OCZ ([www.oczenterprise.com](http://www.oczenterprise.com)), which met all of the company's criteria, for use with its PowerServe DUO T2000 Blade servers.

### Opting For OCZ's Deneva 2 SSDs

PSSC Labs designed its PowerServe DUO T2000 servers to be fast, reliable, and easy to implement. With up to two processors and 96GB of DDR3 memory, the PowerServe servers are built for cloud computing environments. Because the servers are highly customizable with multiple configuration options, PSSC Labs had to find a storage solution that would be just as versatile.

"We explored offerings from many vendors, including recognized big brands and unknown smaller brands," Lesser says. "Our experience with SSDs as a whole has been both rewarding and frustrating. Outstanding performance paired with high failure rates is really difficult to bring to market. As much as we want to offer SSD-based systems, we simply cannot put our end users in compromising positions. We only sell solutions with an acceptable failure level, which in our case is very stringent."

To help fulfill its needs and the needs of its customers, PSSC Labs chose OCZ's Deneva 2 SSDs, which are versatile and great for use with servers and other data center infrastructure because the drives are built with fast transfer rates of up to 6Gbps, usable capacities of up to 480GB, and more. OCZ offers multiple versions of each drive to make sure it meets each customer's needs perfectly.

### Important Features Of Deneva 2 SSDs

OCZ has been making DRAM and NAND products since 2002 and in the past few years, the company has become pioneers in the solid-state industry, as well. The company was one of the first to introduce high-capacity SSDs for multiple industries, and now, OCZ has recently released its line of Deneva 2 SSDs designed specifically to help companies

Deneva 2 SSDs also have a few features that are unique to OCZ. For instance, its R Series drives have DataWrite Assurance built-in, which is power fail protection that hardens data in case of a power failure. These SSDs also have a data fail recovery system that can recover up to one NAND flash block of memory. For security, Deneva 2 drives are both 128-bit and 256-bit AES-compliant, and for simpler management and maintenance, these drives have

uniquely positioned to offer the cloud market the highest performance, greatest flexibility, tool-free design, and unmatched reliability," Lesser says. "Configuring these systems with the OCZ Deneva 2 SSDs has been fantastic. The form factor, compatibility, and overall performance are really a step forward for the SSD market."

Lesser looks back on deploying the drives as a painless experience. "The implementation process has been very straightforward,"



like PSSC Labs get the performance they need for the servers they manufacture.

Deneva 2 SSDs are split into a C Series and an R Series, with multiple configurations within each one. Every Deneva 2 C Series SSD provides more than 500MBps of throughput, fast read/write speeds of up to 500MBps, and multiple capacities ranging from 120 to 480GB of usable IDEMA capacity. The C Series drives are available in 3.5-inch, 2.5-inch, and 1.8-inch sizes, so they can fit almost any server. The Deneva 2 R Series 2.5-inch MLC SSD is available in capacities of 100GB or usable storage up to 400GB and has a slightly faster read-write speed of up to 550MBps.

SMART (Self-Monitoring, Analysis, and Reporting Technology), so you'll always know how your SSDs are performing.

### Implementing Deneva 2 SSDs

PSSC Labs certified OCZ's Deneva 2 drives to be compatible with its own workstations and data center appliance, but it's with the PowerServe DUO T2000 server that the company has seen the biggest benefit. "The PowerServe DUO T2000 is

Lesser says. "There have not been any significant issues, and OCZ has been available to support us every step of the way." And the results have been immediate. Lesser says PSSC Labs has been impressed by the "high reliability" of Deneva 2 SSDs and that one of the biggest benefits is that with OCZ's drives, the company "can now help end users solve performance problems that otherwise would never be solved."

### Problems Solved & Looking Toward The Future

Lesser says that OCZ's Deneva 2 SSDs have solved his company's problems and given both the company and its customers the performance they need for high-quality cloud computing performance. PSSC Labs is now able to "deliver larger-capacity SSDs at affordable prices," which is "a huge benefit to every one of our end users," according to Lesser. And PSSC Labs has been so happy with OCZ's support that it plans on using the company's products as PSSC continues to move into the data center space and evolve its cloud computing offerings. "We are releasing an entire product line specifically geared toward this market," Lesser says. "We will continue to work with OCZ to push the Deneva 2 SSDs for our growing cloud market place." P



OCZ Technology Deneva 2 SSDs

Deneva 2 C Series and R Series SSDs are highly customizable storage solutions for companies that need fast read and write speeds, reliable solid-state storage, a variety of configurations, and additional features that prevent data loss during power outages and other unforeseen events. OCZ designed its Deneva 2 line of SSDs, as well as its other solid-state offerings, for companies in a variety of industries.

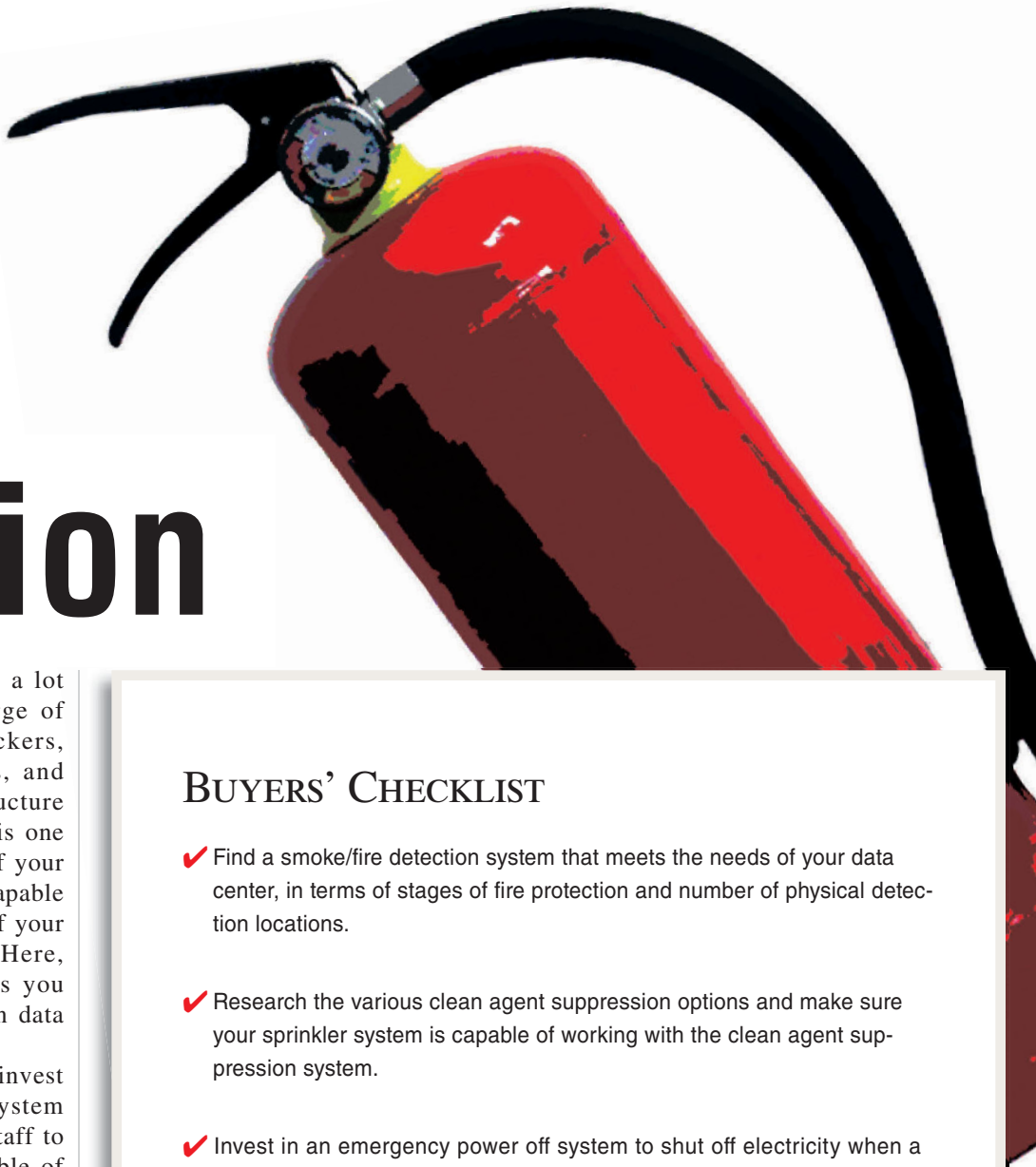
"The PowerServe DUO T2000 is uniquely positioned to offer the cloud market the highest performance, greatest flexibility, tool-free design, and unmatched reliability," says Alex Lesser, vice president of sales and marketing at PSSC Labs. "Configuring these systems with the OCZ Deneva 2 SSDs has been fantastic. The form factor, compatibility, and overall performance are really a step forward for the SSD market."

(408) 733-8400 | [www.oczenterprise.com](http://www.oczenterprise.com)



BUYING TIPS:

# Fire Protection




**YOU PROBABLY ALREADY HAVE** a lot on your plate if you’re in charge of protecting the data center. Hackers, hardware and software failures, and changes to the physical infrastructure are all concerns. Fire protection is one issue that probably isn’t on top of your list, but if your data center isn’t capable of suppressing fires, all the rest of your hard work may be for naught. Here, we’ll examine what key features you should look for when investing in data center fire protection.

**Alert options.** You’ll need to invest in a smoke and fire detection system that can alert employees and IT staff to problems. Some models are capable of detecting the various stages of a fire, such as visible smoke vs. flaming fire vs. intense heat, to allow you to set off alarms or activate various stages of fire protection.

Regardless of which type of suppressant is selected, you’ll need to know at what stage during a fire the detection system should trigger the suppressant to release. According to Steve Joseph, director of market development for Xtralis ([www.xtralis.com](http://www.xtralis.com)), “Unnecessary or poorly timed suppression dumps must be avoided since the cost of such mistakes is enormous, because a volume of clean agent sufficient for even a modestly sized area can cost tens of thousands of dollars to replace.” In short, effective detection is key, as the suppression system is only as good as the detection system initiating the release.

**Suppression options.** Fire protection is generally broken down into water and non-water options. The obvious downside to using a sprinkler system is that electronic devices and water can be a bad combination, especially in situations that are started by electrical fires. Thus, most data centers opt to go with a clean agent suppression system, which is designed to leave no residue and is safe for both electronics and people, unlike some chemical-based fire protection. “Some clean agent suppressants are complex chemical compounds which act on the fire in various ways, such as reducing the heat, while others are pure inert gases which displace the oxygen to inhibit combustion,” Joseph says.

**Emergency power off.** Nearly all data centers also install an EPO (emergency power off) system, which will shut off any electricity to the area where the detector senses a fire. Look for models with industrial-grade contactors, heavy-duty relays, and hard-piped wiring to prevent any accidental shut-offs. The EPO will need to be able to automatically work with your fire detection system. 

## BUYERS’ CHECKLIST

- ✓ Find a smoke/fire detection system that meets the needs of your data center, in terms of stages of fire protection and number of physical detection locations.
- ✓ Research the various clean agent suppression options and make sure your sprinkler system is capable of working with the clean agent suppression system.
- ✓ Invest in an emergency power off system to shut off electricity when a fire is detected.

## KEY TERMS

**Agent storage container.**

The assembly or unit that stores the clean agent fire suppression liquid until it needs to be released when prompted by the suppression control panel.

**Class C.**

Fire breakouts that involve electrical equipment where a non-conductive extinguishing agent must be used.

**Clean agent.**

A type of fire suppression system that leaves no traces behind and won’t damage electronic equipment.

**Deluge.**

A system where all the sprinklers connected to the water piping system are open. If the deluge valve opens due to a signal from the fire alarm system, the entire area will be sprayed with water.

**Early warning smoke detector.**

A passive detector that uses ionization and photoelectric sensors.

**Heat detector.**

A unit that sends a response when the convection of thermal energy changes the temperature of the device’s heat-sensitive element.

**Suppression control panel.**

The unit that houses the interface you use to control the fire protection system, including managing the smoke and fire detection systems and report alerts or sound alarms.




**Very early warning smoke detector.**

A type of smoke detector that actively samples air particles via aspiration to find non-visible smoke.



PRODUCT SPOTLIGHT

# Fire Protection

|             |  |   |   |
|-------------|--|---|---|
| Product     | <h2>Brady Photoluminescent Signs</h2>  | <h2>Brady Fire Signs</h2>   | <h2>Fike SigniFire IP Video Flame &amp; Smoke Detection Camera</h2>   |
|             |   |   |    |
| Description | <p>Brady offers a full line of electricity-free photoluminescent signs to help meet your egress needs. Photoluminescent signs are ideal for green buildings and can help builders earn points toward a variety of LEED credits. Brady's photoluminescent signs are a perfect option for areas with possible electrical power failure. Available in a variety of materials and sizes, Brady photoluminescent signs are 100% reliable and help facilitate safe evacuation during fires, power outages, and emergency situations.</p> <ul style="list-style-type: none"><li>• Non-electrical signs that are visible without power</li><li>• Mark doors and paths for safe evacuation during emergencies</li><li>• Signs are durable and easy to install</li></ul> <p><b>Best For:</b> Companies that need reliable lighted signs, especially in darker areas or places prone to power outage.</p> | <p>Brady fire signs help you quickly identify fire exits, fire extinguishers, and other fire suppression equipment in your facility. Additionally, Brady fire signs can be used as a guide for proper emergency escapes. With exit and glow-in-the-dark fire signs, you can clearly indicate flammable materials and mark your entire facility for emergency safety. Brady fire signs are available in a variety of sizes, materials, and messages.</p> <ul style="list-style-type: none"><li>• Mark emergency paths and fire exits</li><li>• Label flammable materials or fire extinguishers and alarms</li><li>• Glow-in-the-dark signs are easy to see during power outages</li></ul> <p><b>Best For:</b> Any business that needs clearly marked paths and fire exits in case of an emergency.</p> | <p>The SigniFire IP represents a family of turnkey flame, smoke, and intrusion detection camera solutions that visually detect the presence of fire or smoke at its source, independent of airflow in the area. This technology offers a critical advantage for early warning fire detection, identifying and reacting to fire, and protecting lives and property.</p> <ul style="list-style-type: none"><li>• Detects flame in seconds</li><li>• Supplies vital, situational, live video to remote locations</li><li>• Provides video surveillance capabilities</li><li>• Communicates with fire alarm systems</li><li>• Provides prerecorded video forensic evidence for future fire investigations</li></ul> <p><b>Best For:</b> Enterprises looking to identify smoke in large spaces and have video evidence for insurance purposes.</p> |

|             |   |  |   |
|-------------|---|--|---|
| Product     | <h2>Firelock Modular Server Vaulting</h2>   | <h2>Marioff HI-FOG Water Mist Fire Protection System</h2>  | <h2>Periphman Aero-K</h2>   |
|             |    |   |    |
| Description | <p>With Firelock's Modular Server Vaulting, you get a custom-designed vault that's built to suit your needs.</p> <p>A Firelock modular vault is an enclosure with integrated environmental monitors and fire suppression components, which makes it easier to protect the contents from a fire on the outside. The vaults protect your valuable components from fire while you monitor the servers and equipment from a remote location.</p> <ul style="list-style-type: none"><li>• Class 125 four-hour rated vault door</li><li>• Smoke- and heat-activated hydraulic door closer</li><li>• Environmental/alarm monitoring</li><li>• CCTV surveillance</li><li>• Novec 1230 fire suppression</li><li>• Watershield roof deck</li><li>• Fire-rated electrical cable trays</li><li>• Master power switch</li></ul> <p><b>Best For:</b> Enterprises that want to ensure mission-critical operations by protecting key equipment in an isolated, secure, and fire-protected area.</p> | <p>The HI-FOG system from Marioff discharges a fine water mist at high velocity to suppress and extinguish fire. This setup can be used in place of deluge, gas, foam, dry chemical, traditional sprinkler, and other types of fixed fire protection. HI-FOG uses up to 90% less water than a conventional sprinkler system, which means cleanup is fast and business downtime is kept to a minimum. Fire, water, heat, and smoke damage are minimized, as well, and it stops the fire from spreading or reigniting. A typical HI-FOG system in a data center consists of a high-pressure pump unit, a small water supply tank, section valves, small-diameter stainless steel tubing, and HI-FOG sprayheads.</p> <ul style="list-style-type: none"><li>• Uses a three-prong approach: cooling, radiant heat blocking, and local oxygen inerting</li><li>• Offers total facility fire protection to simplify maintenance and deliver cost savings</li><li>• Minimizes business disruption because system discharge is localized at only the point of the fire</li><li>• Use of various systems configuration points minimizes risk of leakage and false discharges</li><li>• Spaces will not need to be evacuated or closed off for HI-FOG to be activated</li><li>• Can be easily expanded to new phases of a data center facility</li><li>• Supports environmentally sustainable design</li></ul> <p><b>Best For:</b> Organizations that want a system that covers all of their fire protection needs.</p> | <p>Periphman's Aero-K fire suppression system uses potassium-based aerosol generators that can extinguish a fire in seconds. The aerosol won't harm electronics or electronic media such as tapes and disks or the health of facility personnel. Aero-K aerosol generators are compact and easy to install and feature multiple smoke detectors that limit the chance of accidental discharge.</p> <ul style="list-style-type: none"><li>• Available as thermal or electrical units</li><li>• Won't corrode steel, plastic, nickel, brass, zinc, copper, aluminum, or other commonly used composites</li><li>• Leaves little residue after venting</li><li>• Ecologically friendly with no agents that can harm the ozone layer</li><li>• Control panel with battery backup in case of power outage</li></ul> <p><b>Best For:</b> Information technology and telecommunications industries.</p> |



PRODUCT SPOTLIGHT

Processor's Product Spotlight highlights options available in key data center product categories, providing product information side-by-side for easy comparison.

Fike Prolnert Gas Fire Suppression System



Fike's Prolnert system uses inert gas fire suppression technology to put out fires quickly and safely. The Prolnert agent is discharged at a steady flow rate, preventing destructive turbulence, and only the necessary amount of extinguishing agent is released. The system also uses environmentally friendly fire suppression agents.

- Replace your existing, and potentially harmful, fire suppression system with an environmentally friendly one
- Reduce installation costs by as much as 60% on hardware with smaller venting areas
- Can be placed in almost any non-critical area
- Directional selector valves decrease the chance of additional infrastructure damage

**Best For:** Companies that need to replace older fire suppression systems to support a green initiative and save money.

Fike ECARO-25 Clean Agent Suppression System



Fike's ECARO-25 system uses a gaseous clean agent to suppress fires without damaging high-end equipment, electronics, and irreplaceable items with water. It uses an agent called FE25 made by DuPont that absorbs heat energy at the molecular level so a fire can't sustain itself. The system uses Impulse Valve Technology, which efficiently and effectively puts out fire by combining the reliability and efficiency of a rupture disc with the flexibility of electric actuation.

- Puts out fires using a unique, environmentally safe fire-suppressing agent
- Protects expensive infrastructure from fire damage as well as additional water damage
- Use your existing Halon pipe network and update it with the ECARO-25 system

**Best For:** Enterprises that need an efficient fire protection system that prevents excessive damage to crucial IT components.

Polargy PolarPlex Drop Away Panels



One of the big challenges with air management products is maintaining data center fire safety without sacrificing visibility in the aisles. Polargy's PolarPlex Drop Away Panels address those challenges. The panels are the only ones on the market with a UL listing for use under sprinkler heads. With an activation temperature of 135 degrees Fahrenheit, the panels fall to the floor in the event of a fire, so the ceiling-based fire suppression system can operate free of obstructions.

- Custom made to order
- Lightweight and easy to install (a 2- x 4-foot panel weighs only 7 pounds)
- Panel insert material is a special transparent plastic, allowing light to pass through
- Each panel is 0.013 inches thick and slots into an extruded 1-inch anodized aluminum frame

**Best For:** Data centers that need to seal the top of a hot or cold aisle while still allowing a fire suppression system to work as needed.

Victaulic Vortex



The Victaulic Vortex fire suppression system is the world's first-ever hybrid (water and inert gas) fire extinguishing system that extinguishes fires without the use of any toxic chemicals by deploying a high-velocity, low-pressure mixture of nitrogen and water. The system delivers as little as 1 gallon of water per emitter per minute, and each emitter can protect up to 2,500 cubic feet. The system is compatible with facility fire protection systems to provide greater design flexibility, and it is recharged rapidly, allowing for a return to working conditions almost immediately after a fire.

- Nearly zero wetting of protected areas
- No ozone depleting or greenhouse gas emissions
- Quick system recharge to support minimal facility downtime
- Protects people and assets

**Best For:** Protection of enclosed cabinets and isolated equipment within protected spaces.

Do you  
have a  
**NEW**  
**PRODUCT**  
that data  
center/IT  
managers  
would be  
interested  
in learning  
about?

Send your press release or related product information to [press@processor.com](mailto:press@processor.com).



# Get Started With Environmental Monitoring In The Data Center

Perfect Conditions From Start To Finish

**ENVIRONMENTAL PROBLEMS** are the main causes of data center downtime. When environmental conditions are not perfect—or worse, out of control—equipment, productivity, and the data center budget are all affected. Indeed, there is a science to implementing the right environmental monitoring solution for the data center, but every data center is not the same. Knowing where to begin, what tools to use, and understanding the benefits and pitfalls, can help you manage risk, make the data center more comfortable, and save you huge headaches down the road.

### Understand The Basics

For Dave Ruede, vice president of sales and marketing with Temperature@lert ([www.temperaturealert.com](http://www.temperaturealert.com)), getting started with environmental monitoring is much like deciding which temperature in your home is most comfortable. “For data centers, server and telecommunication rooms, this can be as simple as taking a look at the thermostat in the room, which will tell you the temperature at that location. From there, collecting data for a baseline is the next step. But temperatures in data centers and even server racks and aisles can vary significantly.”

Ruede says taking a baseline will require measuring temperatures in several places, near the floor, ceiling, at the outlet of the AC registers, and for a complete data set, at the bottom and top of server racks both inside and outside.

According to Bob Douglass, vice president of sales and marketing at Sensaphone ([www.sensaphone.com](http://www.sensaphone.com)), the first step is always to determine your needs. “That may sound simple and obvious,” Douglass notes, “but there are usually more things to consider up front than most people realize.” Although people typically think of temperature first, Douglass says, there are other issues that need to be considered, such as humidity, which can produce condensation or corrosion and shorten the lifetime of electronics. Other issues can arise from city power or UPS failure, and air-flow issues such as smoke and fire. “In the event of an actual fire, who is contacted first? It is not always the IT staff responsible for implementing the disaster recovery plan,” Douglass says.

### Understand The Environment

Michael Sigourney, president and CEO of AVTECH Software ([www.avtech.com](http://www.avtech.com)), says he recommends that IT and data center managers “know thy facility.” “The first thing an IT or facilities manager needs to consider and create is an understanding of the basic layout and elements, both structure and equipment, within their facility,” he says. “Knowing where threats are likely to occur or have occurred in the past is key to planning success. Environmental monitoring is not a ‘one size fits all’ scenario, as each facility is unique.”

### Key Points

- Getting started with environmental monitoring is like deciding which temperature in your home is most comfortable—start by understanding the current conditions.
- Understand a facility's basic layout and elements, structure and equipment, and past threats. Environmental monitoring is not a ‘one size fits all’ scenario.
- Look for an environmental monitoring solution that will meet both current monitoring requirements and allow room for future expansion as needs change.

Sigourney says as equipment is relocated or replaced over time, the environmental structure of a facility changes and will likely require changes in sensor location, a need for additional sensors, changes in cooling, or other considerations in order to maintain effective monitoring.

The most important information companies can consider before getting started, in the opinion of Temperature@lert’s Ruede, is the history of the data center, server or telecommunication room’s operation related to environmental monitoring. Ruede suggests questioning issues such as the reliability of the location’s power company; potential power interruptions due to thunderstorms, the status of the facility’s electrical systems and equipment; and whether or not cooling systems can maintain during peak demand periods.

### Understand The Tools

After evaluating your needs and analyzing your vulnerabilities, Sensaphone’s Douglass says you should choose a vendor and basic platform to work from. “Most systems will involve some sort of base hardware device that sensors connect to, and that also handles the communications,” he says. “The next step is to start planning sensor types and locations, start buying, and start installing.” One further optional step, Douglass notes, is to consider integration into your existing network management software using SNMP. “This investment is only time, but is well worth while.” One thing to be careful of, Douglass says, is equipment dependencies. For example, monitoring systems that operate on a server or PC would be useless if the server went down. And wireless sensors should use their own Wi-Fi network to ensure operation during power failures. He says built-in battery backup is never a bad thing with monitoring products.

In AVTECH’s Sigourney’s opinion, after a facility has been analyzed, it is important to look for a solution that will meet both current monitoring requirements and allow room for future expansion as needs change. There are several environmental monitoring options available for SMEs, he says.

“Whether a manager is looking to monitor temperature only, desires a wireless solution capable of monitoring up to 100 sensors, or something in between, an environmental monitoring solution typically includes the following key components: a monitor, sensors, software, and support services.”

Sigourney points out that some vendors don’t provide software, although their products can still be monitored using third party SNMP-based software. In his opinion, the best solutions include software. “This prevents wasted time trying to get hardware and software from two vendors working together.”

### Costs & Benefits

According to Douglass, environmental monitoring costs can range from a

few hundred dollars for a simple monitor to \$3000 or more for an expandable enterprise system. Ruede says costs largely depend on the number and type of sensors deployed and how they are monitored.

At the end of the day, Sigourney says the benefits of installing an environmental monitoring solution include a faster response to potential disasters, reduced downtime, lower ongoing management costs, reduced overtime and perhaps most important, peace of mind. He says the pitfalls of not installing an environmental monitoring solution can be expensive hardware replacement, unexpected downtime, working overtime unexpectedly, or looking like your organization is out of business. <sup>P</sup>

### Top Tips

The following tips are provided by Chris Gaskins, vice president of product development at RF Code ([www.rfcode.com](http://www.rfcode.com)).

- ✓ Data center management today is all about risk management, automation, and efficiency/optimization. All three of these actually tie together when you are talking about environmental monitoring, as understanding environmental issues such as temperature, humidity, fluid, and air pressure affects risk management strategies, automation projects, and especially efficiency/optimization. You can’t measure and improve something that you don’t monitor, and you can’t monitor what you don’t have instrumented.
- ✓ Installing environmental sensors at the correct locations as well as fully integrating and utilizing the information produced by these sensors are a must in order to fully realize the benefits of an environmental monitoring system.
- ✓ As your implementation matures, you will find that the data/information from the environmental monitoring system will need to feed in to multiple different systems. With that in mind, it is key to select an environmental monitoring system that is open and easy to integrate with. Closed proprietary systems should be avoided.
- ✓ The physical implementation of the sensors can be a very time-consuming and expensive exercise. Plan for this accordingly in your purchase decision and try to select a solution that reduces this deployment time and complexity as much as possible.





COMPANY TO WATCH

# Colocation On A Grand Scale

## 1102 Grand Puts An Emphasis On Connectivity & Customization

**IF LOCATION IS** a defining factor in selecting a colocation provider, 1102 Grand ([www.1102grand.com](http://www.1102grand.com)) has a leg up on the competition. Located in Kansas City’s Financial District, the company’s building is a hub for numerous cross-country fiber routes passing through 1102 Grand’s carrier-neutral Meet Me Room—a fact that makes 1102 Grand able to provide customers strategic advantages other colocation providers in the region cannot.

“The building serves as a major hub for voice and data traffic in the region by providing a facility with the necessary infrastructure for carriers, service providers, and commercial customers to conduct network-related business together reliably and cost-effectively,” says Greg Elliott, director of business development at 1102 Grand. 1102 Grand is situated directly on Kansas City’s major metropolitan fiber ring, leading top-flight telecommunications companies (Level 3, Verizon Business, and AT&T included) and regional carriers, service providers, and enterprise customers to build and operate data centers, nodes, and/or POPs (Points of Presence) at 1102 Grand.

“These tenants then extend their desired connectivity media (fiber, coax, copper, etc.) into our carrier-neutral Meet Me Room to

interconnect with one another and provide services to other entities,” Elliott says.

**In Grand Fashion**

1102 Grand’s customers buy space, power, and cooling from the company but separately arrange for bandwidth and other services from the 30-plus carriers/providers available. Thus, customers have a range of affordable circuits of all sizes to choose from, Elliott says.

Overall, Elliott says, customers don’t have to worry about a middle man marking up pricing or fear they’ll need to relocate to a different colocation provider simply because they don’t wish to continue purchasing from a provider whose service did not meet their needs. Instead, 1102 Grand’s tenants can arrange to have their cross-connect moved to a different provider, add redundant connections to other providers, or cross-connect with a value-added service provider to access additional services. Further, 1102 Grand’s customers have access to cost-effective remote hands and eyes services.

1102 Grand’s colocation options include private cabinet


space in one-third cabinet (14 rack units), half cabinet (21 rack units), and full cabinet (42 rack units) options with raised floors, combination locking, and digitally metered in-cabinet power strips. Cage options range from 9- x 12-square-foot key-locked cages with raised or non-raised floors to private cages measuring 1,000-plus square feet with options to ramp up as needed. Private data suites offer 1,000-plus square feet in four-walled white boxed rooms with private doors in which customers can design and build out data centers to their required specifications.

Power-wise, two separate electric utility feeds supply 1102 Grand with more than 5 Megawatts of power protected by automatic

transfer switching, redundant UPS infrastructure, and diesel generator backup. 1102 Grand maintains two cooling towers and a system that enables it to regulate water directly from the city of Kansas City, Missouri, to maintain proper cooling loop temperature should the cooling towers fail, as well as wanner tanker refilling service contracts. A card access system controls physical entry into the building, while multifactor security protects secure spaces. Security cameras are installed throughout the building, and video is stored 60 days minimum on- and offsite.

**A Perfect Fit**

Because 1102 Grand owns its facility, Elliott says, “tenants get to work directly with us to ensure fair and flexible terms, and we even offer build credits as incentives for private data suite build-outs depending on the tenant’s design and requirements.” In other words, rather than taking a “cookie cutter” approach, 1102 Grand tailors its solutions to fit each prospective customer’s requirements and budget.

“Although we know technology is the core of many of our tenants’ businesses, at the end of the day, it all comes down to people. People purchase products and services, recommend providers to peers, and create innovative solutions to real-world business problems,” Elliott says. 



**Company Name:** 1102 Grand  
**Location:** Kansas City, Mo.  
**URL:** [www.1102grand.com](http://www.1102grand.com)  
**Date Company Founded:** 2003  
**Interesting Fact:** Located in Kansas City’s Financial District at the corner of 11th Street and Grand Avenue, 1102 Grand’s building is listed on the National Historic Registry and became the fourth tallest building in Kansas City upon its completion in 1931.





# WeBuyUsedTape.net

## We pay top dollar for your new and used tapes.

- DoD, HIPAA, and SOX-approved processes
- On-Site Data Destruction and References available
- 35 years experience; 20 years same facility

**We make it easy:**

- Submit your list of media: online, email, or fax
- Receive a confidential offer within 24 hours
- Documentation and shipping arrangements prepared
- Tapes received and verified at our secure facility
- Data eradicated using safe and approved processes
- Receive payment and Data Destruction Certificate

**Contact us now! Free Shipping and Fast Pay!**

**(800) 821-1782    [www.WeBuyUsedTape.net](http://www.WeBuyUsedTape.net)**



### Instructor-Led IT Certification Boot Camps

CBT XPress offers a variety of IT Certification Boot Camps. These Certification Boot Camps are the fastest and most effective way for you or your staff to gain the skills and knowledge needed to become certified. Our expert trainers are some of the best Boot Camp instructors in the industry, authoring books and/or certification training materials, including award-winning practice exams.

Available Camps:

- **CompTIA A+ Boot Camp – 3 days**
- **CompTIA Network+ Boot Camp – 3 days**
- **CompTIA Security+ Boot Camp – 3 days**
- **CompTIA A+, Network+ and Security+ Combo Boot Camp – 9 days**
- **Microsoft MCTS Windows 7, Configuring Boot Camp – 3 days**
- **Microsoft MCITP Windows 7, Enterprise Desktop Support Technician Boot Camp – 6 days**
- **Microsoft MCITP Windows 7, Enterprise Desktop Administrator Boot Camp – 6 days**
- **Microsoft MCTS/MCITP Windows 7, Combo Boot Camp – 9 days**
- **Cisco CCNA Boot Camp– 7 days**

Our on-site Boot Camps include:

- Certified Training Instructor
- Test Proctor

- One-on-One Coaching
- Immediate Testing

Call **1-877-TRAINING** (872-4646) and mention ad-code **PROCM TODAY** to reserve your seat.

**Classes are filling up fast!**

*We'll come to you!* – If schedules don't allow your staff to come to us, we'll come to you! CBT XPress frequently travels to corporate offices and military facilities, conveniently providing the same certification Boot Camp training – right at your location.



**1-877-TRAINING**  
[www.cbtxpress.com](http://www.cbtxpress.com)



TECH IN DEPTH

Key Points

- Although they're currently voluntary in the United States, carbon credits can still be purchased through a greenhouse gas reduction trading platform.
- California plans to implement a carbon cap-and-trade system this year, though that plan has been delayed for now by a court ruling.
- Consultants and power utilities can help you determine your data center's carbon footprint and help you plan for the future.

Take Credit For Energy Use

Carbon Credits Are Gaining Ground As Environmental Concerns Rise

*Do you know what your data center's carbon footprint is? If not, be aware: Not only might that information be valuable, the day might come soon when you're required to both know it and keep it at a certain level. To that end, carbon credits are a growing force in the green IT arena.*

GROWING ACCOUNTABILITY

Data centers, put simply, are energy hogs. According to recent research by James Hamilton, vice president and distinguished engineer at Amazon Web Services (aws.amazon.com), data centers eat up almost 0.3% of the United States' energy usage. The consequences of all that consumption include carbon emissions, which have been shown to contribute significantly to greenhouse gases.

"As we continue to shift to the digital age, more energy is consumed by data centers, which house the equipment that stores and processes all of the information," says Morris Scott, president of DMD Systems Recovery (www.dmdsystems.com). "Because the data center is a significant portion of corporate energy use, many data center managers have been tasked with reducing energy consumption, and with it, the corporate carbon footprint." The primary ways

to be proactive about accountability are by increasing the data center's energy efficiency and by purchasing carbon credits. Carbon credits are tradable certificates representing the right to emit a certain amount of carbon dioxide or its equivalent. Voluntary carbon credits are referred to as offsets, while mandatory credits are purchased from a state or national agency that has put the carbon mandate in place.

PREPARE FOR REGULATION

Buying carbon credits in the United States is still voluntary because the country doesn't participate in the Kyoto Protocol, which regulates carbon output internationally. Credits can be purchased through such carbon market outlets as the Chicago Climate Exchange (www.chicagoclimatex.com), a voluntary greenhouse gas reduction and offset trading platform.

However, the days of voluntary compliance with carbon protocols for data centers

are numbered. California has plans to implement a carbon cap-and-trade system in 2012, although a recent ruling in San Francisco Superior Court put the plan on hold while officials study other methods of limiting greenhouse gas emissions.

That doesn't mean the day of mandatory carbon limiting for data centers isn't coming, though, says Edward Weisberg, vice president of marketing and business development at consultancy GXT Green. That's especially true for companies with cloud clients located across a wide geographical range.

"If and when [a carbon cap] happens, you'll be obligated to participate if your data center is in California or if you even have clients in California," he says. "That holds true currently if you work with international clients that are regulated by the Kyoto agreement."

Dr. Joe Polastre, CTO of Sentilla (www.sentilla.com), also warns that data center managers need to be ready for regulation. "Today, carbon does not play an impact on the enterprise," he says. "But programs that you put in place today may not meet the carbon regulations that are passed in the future."

Most countries are looking at either a flat tax or cap-and-trade system, Polastre points out. In either case, the cost impact on enterprises that run their own data centers is expected to be between 4% and 6% of its total electricity usage.

In the meantime, Polastre suggests talking to your utility company to find ways to track your data center's carbon emissions. "Implement as much metering as possible when building the facility so that you don't have to retrofit after regulation is passed," he says.

Go Green To Save Green

There is an easy way to reduce your data center's carbon footprint that comes with a nice side benefit: saving money. Kevin McDonald, senior analyst and cloud strategist with tech consultancy ICFI, says energy-efficiency work done on the front end can not only forestall problems when carbon limits become mandatory in the United States, but it can pay financial dividends immediately.

McDonald says that using cheaper alternative energy sources such as wind power can have a dramatic effect on data centers' energy costs, along with running machines at non-peak hours and other methods.

"You can use many of the same methods you might use to reduce your home energy bill," he says. "A lot of it is just common sense."

AIRBLOCK  
DATA CENTER SYSTEMS

FlexSim FR™

- Fire Rated Vinyl
- Made in the USA

Our New ASTM Fire-Rated Vinyl!

Designed for Your Data Center

Fire protection is an important consideration for data center managers. Simplex has worked hard to develop a fire-rated material that fills your needs. Our goal is to set the standards for hot aisle and cold aisle isolation.

- Developed to meet the stringent demands of data center fire protection.
- Meets ASTM E-84 Class 1 and NFPA 701 standards.
- Also available in an anti-static formula with built-in ESD inhibitors.

Call Simplex or visit our website. See our complete line of curtains, partitions, doors and accessories.

SIMPLEX™  
ISOLATION SYSTEMS

Call your dealer today: 1.800.854.7951  
Email: sales@simplex.net • simplexisolationsystems.com

Prepare For The Unexpected With Room Alert™

No one knows when or how disaster will strike. We just know the potential is always there. So preparation is crucial to minimizing its impact on computers, networks, users & business.

When disasters occur, there are significant costs in areas that go far beyond the simple replacement of damaged hardware. This is because what happens in the data center or other facility effects the entire organization. If disaster strikes your facility, how will it impact business? Who will get the blame? Could it have been prevented? What will it cost?

AVTECH has a full line of powerful, scalable Room Alert solutions for real-time environment monitoring in a computer room, data center or other facility. All models arrive assembled with easy to install hardware, cables, sensors, easy-to-use logging & alerting software, printed documentation, unlimited technical support and a '30-Day Satisfaction Guarantee'. Users can typically install in under 10 minutes.

Room Alert products monitor critical environment conditions like temperature, power, humidity, flood, smoke, room entry, air flow, motion and more, alert staff by any method and can take automatic corrective action. There is a model that is right for any organization and budget... yours too!

Solutions Start At \$195

Room Alert products can monitor:

- Temperature
- Humidity
- Heat Index
- Main / UPS Power
- Flood / Water
- Room Entry, Motion
- IP Network Cameras
- Smoke / Fire
- Air Flow
- Sound, Light
- Panic Buttons
- Dry Contacts
- Switch Sensors
- Wireless & More

Call or Visit Us Online Today

AVTECH

888.220.6700 • 401.628.1600  
AVTECH.com

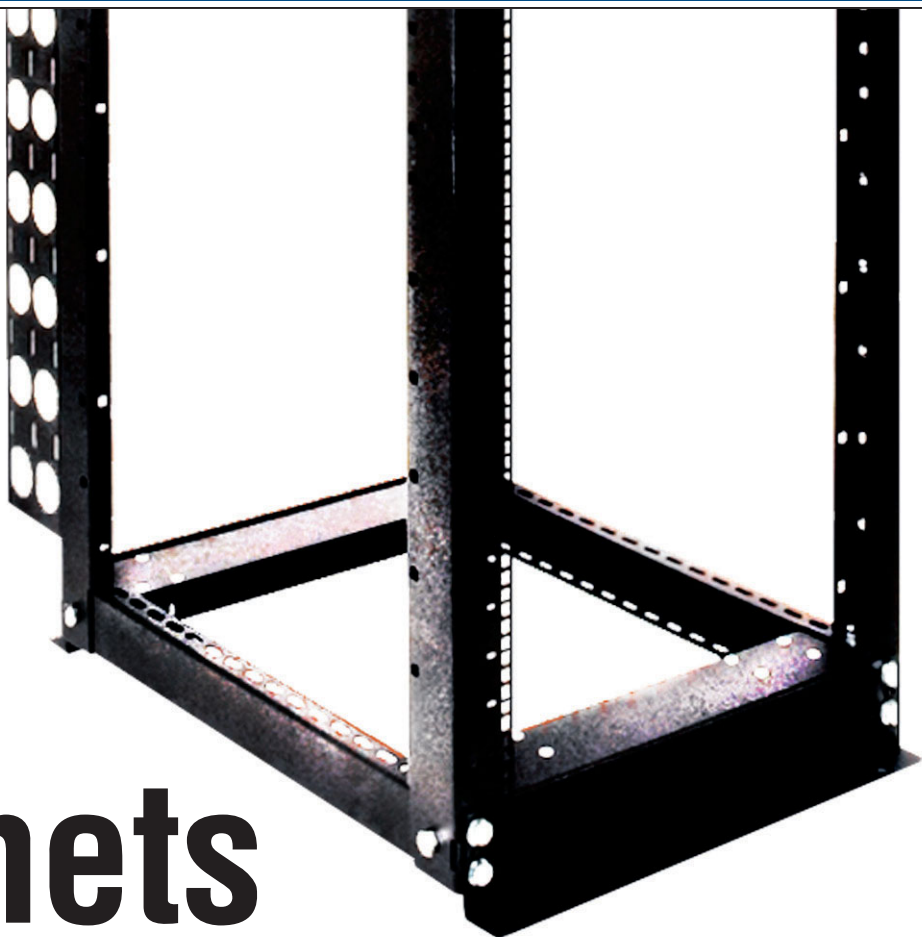
Protect Your IT Facility... Don't Wait Until It's Too Late!™

\* AVTECH is the worldwide leader of IT & facilities environment monitoring products. Purchase online at [EnvironmentMonitor.com](#). Reseller inquiries welcome.



BUYING TIPS:

# Data Center Racks & Cabinets



**RACKS AND CABINETS** are integral components of nearly every data center, but their importance often goes overlooked. Make the wrong choice in the type you stick your equipment on or in, and you could be asking for trouble in terms of damage caused by heat, dust, and moisture; exorbitant cooling costs; unwieldy cables; excessive noise; and security breaches. When purchasing racks and cabinets, keep the following considerations in mind.

**Know thy equipment.** You may know what equipment you'll use your racks and cabinets for, but you also need to know the impact that equipment will have. For example, knowing how tall and wide the racks/cabinets must be to accommodate said equipment is imperative. Height-wise, Gina Dickson, Black Box Network Services product manager, says, "42U is standard, but 45U is becoming more popular, and a smaller height like 38U might be necessary for legacy rooms where cable is going to be overhead." Width-wise, the current cabinet standard is 24 inches wide, though 30-inch wide cabinets are gaining popularity. Depth-wise, "if you are mounting equipment with different depths, you may even need to consider multiple sets of rails or split rails to accommodate the different depths," Dickson says. Overall, Rackmount Solutions account manager Susan Wynne suggests buying cabinets that can accommodate equipment "with the largest dimensions" possible.

**Work the room.** Related to space considerations is an analysis of the room the racks/cabinets will go in, Wynne says. "Can the cabinet be easily transported to the destination?," she says. "Will it roll through standard-height doors? Are doors and side panels removable for easy installation? Is the product solid and durable? Is there room to grow for additional product purchases?," Dickson adds that it's important to take into account raised floors and ceiling height, which will impact how tall racks/cabinets can be. "Bigger is always better when choosing a cabinet, allowing for more equipment, cables, etc.," she says. "But if you have a limited footprint, the 48-inch deep, 30-inch wide cabinet may not be an option."

**Stay cool.** One of the most important considerations is heat. Gauging how much heat equipment will generate will help determine what cooling methods

will be adequate for the racks/cabinets you purchase. For example, Dickson says, using a traditional hot aisle/cold aisle approach will impact the cabinet doors required because you'll need mesh doors. "You need to ensure that the cool air is directed to the front of the cabinet and that the hot air can disperse from the rear," Dickson says.

Elsewhere, the temptation to use open racks vs. cabinets to combat heat can result in merely filling the entire room with heat. "This may work fine for low levels of heat, but once enough equipment is present, it will become impossible to keep the equipment at an acceptable temperature," Dickson says. One cooling approach gaining popularity is a modified hot aisle-cold aisle with containment, she

says. "All the cold air is forced into the cold aisle, which is contained with doors to keep the cool air in. The warm air is then pushed back into the room or up into the plenum using chimneys on the top of the cabinets." This approach does require a cabinet offering containment doors and chimneys as accessories.

**Other factors.** Your rack and cabinet purchases will also need to take into consideration items such as determining whether equipment needs to adhere to ETSI standards, checking if rails are pre-drilled and adjustable, knowing rail weight limits and included mounting hardware, safeguarding against earthquakes, examining overnight and weekend building air conditioning practices, and factoring in noise. ■

## BUYERS' CHECKLIST

- ✓ Is cable management built in, or does the rack or cabinet leave adequate space to neatly route cables?
- ✓ Does the rack/cabinet provide PDU mounting options?
- ✓ Many cabinets now come standard with PDU mounting brackets.
- ✓ Does the equipment you're mounting require tapped or M6 holes?
- ✓ Will you need to disassemble the rack/cabinet to get it in the room?
- ✓ Is the cabinet lockable to prevent potential security issues?

## KEY TERMS

### M6 holes.

Square holes common with rackmount equipment and server cabinets; they can be adjusted to a round hole with a cage nut.

### Rackmount units (RMU).

Cabinets and racks are measured in rackmount units, with each RMU, or U, equivalent to 1.75 inches.




PRODUCT SPOTLIGHT

# Specialty Racks & Accessories

Product

Black Box  
ClimateCab NEMA 12 Cabinets



Description

Black Box's ClimateCab enclosures offer climate-controlled protection that lets you install servers without the need for additional cooling or costly infrastructure. These full-sized cabinets come configured for servers or datacom equipment and feature a welded 12-gauge steel frame with integral struts.

- Rated for protection against falling dirt; circulating dust, lint, and debris; and dripping or splashing liquids in indoor environments
- Full-sized cabinet with 42U of racking space
- Available with 12-24 or M6 rails
- Choose from models with 6,000 BTU or 8,500 BTU air-conditioning units
- 40-inch depth accommodates most servers

**Best For:** Housing servers in remote locations without cooling infrastructure.

**Price:** \$4,499.95 to \$5,499.95

Product

Black Box ClimateCab  
NEMA 12 Wallmount Cabinets



Description

ClimateCab NEMA 12 Wallmount Cabinets from Black Box are the answer when you need to install a small amount of rackmount equipment in less-than-ideal conditions. These secure cabinets provide a compact way to protect and cool sensitive components.


- NEMA 12 rated for protection against falling dirt; circulating dust, lint, and debris; and dripping or splashing liquids in indoor environments
- Compact wallmount design saves space
- Single- or double-hinged
- Choose from a cabinet with a fan or an 800 BTU air-conditioning unit

**Best For:** Equipment protection in hot, dirty environments such as factory floors.

**Price:** \$999.95 to \$2,795.95

Product

Data Center Depot CableMax



Description


CableMax from Data Center Depot is the premier cabinet for cable and heat management. This cabinet was designed to combat the problems caused by the trend of components getting smaller while capacity is increasing. CableMax employs an abundance of cable pass-through holes in the frame for cross cabling and mesh enclosures to promote airflow throughout the cabinet.

- Can use split rear doors to save aisle space
- Split rail system available so you can have two different rail depths
- Improved Ganging system
- Features 63% or 80% mesh in doors and top panels
- Additional adjustable vertical and horizontal cable management available
- Dirak locks and handles on doors and side panels

**Best For:** Data centers in need of a cabinet with a large number of cable pass-throughs.

Product

iStar Group  
Claytek WSM-960  
9U 600mm Depth  
Rackmount  
Server Cabinet



Description

With a supported chassis depth of up to 23 inches, the rugged, shockmount-style WSM-960 server cabinet from iStar Group's Claytek division features a patented anti-vibration design with an industrial spring located under the cabinet post cage.

- Gilled side panel air vents
- Portable handle included
- Optional front and rear covers and optional casters
- Universal approach fits most rackmount chassis and equipment

**Best For:** High-risk and rugged IPC environments.

**Contact:** (888) 989-1189 | [www.istarusa.com](http://www.istarusa.com)

Product

RackSolutions  
58U Open Frame Rack



Description

The 58U Open Frame Rack from RackSolutions provides up to 38% more space than a typical 42U model, while consuming less square footage. The rack optimizes cooling, makes wiring easy, and has streamlined support for power strips and PDUs. It is compatible with Dell, HP, IBM, Cisco, and almost everything else. Optional accessories include vertical cable organizers, side panels, tops, a caster kit, power strips, and a baying kit.

- 3,000-pound capacity
- 24-inch width makes it perfect for data centers
- Flush floor mount spreads load on floor tiles
- Universal square holes
- Three depth options include: 28.875", 24", and 20"
- Other sizes available: 24U, 30U, 36U, 44U, 50U, 55U


**Best For:** Data centers that could benefit from additional vertical rack storage space.

**Price:** Starts at \$599.99 for 58U

**Contact:** (888) 903-7225 | [www.racksolutions.com](http://www.racksolutions.com)

Product

RackSolutions Secure  
Server Unit



Description

The Secure Server Unit (SSU) from RackSolutions helps protect sensitive server data by locking the unit in the rack and preventing access to its ports, hard drives, etc. If you have a need to secure one or more servers within a shared rack, the SSU is the perfect solution. The Secure Server Unit may also be used as an economic alternative to a colocation cabinet. It includes a front and rear housing that each mount to the rack and include doors that are only accessible with a key. A top, cross bar is an additional deterrent for unauthorized server access. The SSU is compatible with square, round, and threaded hole racks, and it is designed to accommodate two 1U servers or one 2U server.

- Economic alternative to a colocation cabinet
- Works with any 4 post, 19-inch rack
- Has locking doors in front and rear of rack
- Houses two 1U servers or one 2U server
- Requires RackSolutions Universal Rack Rails

**Best For:** Securing single servers in a shared rack.

**Price:** Starts at \$219.99 (Part #: 124-2247)

**Contact:** (888) 903-7225 | [www.racksolutions.com](http://www.racksolutions.com)



PRODUCT SPOTLIGHT

Processor's Product Spotlight highlights options available in key data center product categories, providing product information side-by-side for easy comparison.

## Data Center Depot Seismic Equipment Cabinet



The Seismic Equipment Cabinets from Data Center Depot are designed to protect valuable equipment in the event of an earthquake. A basic 40U cabinet is available, along with two 44U cabinets with special features designed to protect and manage a large volume of cables, patch cords, or fiber cables. This cabinet has an integrated top panel with cable pass-through and options such as a bend limiter with access hinge and a cable tie-down bar to enhance cable management.

- NEBS Zone 4 tested
- Top panel with cable cutout for cable pass-through
- Available with open- or solid-sided frames
- Cable management available
- Available in various sizes

**Best For:** Data centers that need to protect equipment from possible earthquakes.

## Hergo ApxServer Noise Reduction Enclosure



Hergo's ApxServer Noise Reduction Enclosures allow for mounting of all computers and electronic equipment that meets the EIA 19-inch specifications. The enclosures are 24 x 36 inches and come in either 12U or 26U heights. They feature Class A noise reduction foam and are Class A fire-rated.

- Can hold up to 800 pounds (12U model) or 1,000 pounds (26U model) with industrial casters
- 12U version perfect for under desks
- Black, quality powder-coat finish; environmentally friendly
- Front and back doors include locks

**Best For:** Enterprises that could benefit from reduced noise levels.

**Price:** Starts at \$1,195

**Contact:** (888) 222-7270 | [www.hergo.com](http://www.hergo.com)

## Hergo Jupiter Co-Location Rack Cabinet



Hergo's heavy-duty full-sized Jupiter Co-Location Rack Cabinet features 20U x 2 top and bottom locking compartments.

- Two basic standard frame sizes—42U x 36" or 42"D
- Removable, lockable side panels
- Front door—vertically louvered with glass
- Rear door—solid with knock-outs for up to three fans (optional)
- Handle or combination lock available.
- Two locking/two non-locking casters supplied
- Quality powder coat finish—environmentally friendly
- Options include: fixed/slide-out shelving, power and cable management, cooling solutions

**Best For:** Customers requiring complete security and protection of valuable network equipment at host or private locations.

**Price:** Starts at \$1,695 (36"D) or \$1,825 (42"D)

**Contact:** (888) 222-7270 | [www.hergo.com](http://www.hergo.com)

## Rackmount Solutions Air Conditioned Server Cabinet & Soundproof Server Rack



Rackmount Solutions' Air Conditioned Server Cabinets have built-in A/C units with 4K, 7K, 10K, or 20K BTUs to protect equipment in warm or dirty environments. Units are available from 14 to 48U, with depths from 24 to 42 inches. Soundproof Server Racks from Rackmount Solutions reduce external sound up to 28.5dB while dispersing internal heat loads up to 7kW. Built-in casters make it easy to move these servers to another area when the need arises. The Soundproof Server Racks are available in active and passive versions and in 24U and 42U sizes.

- Air Conditioned Server Cabinet protects expensive equipment from overheating, works like a refrigerator with a condensate pan, and can be paired with a rack-mount or side-mount A/C for more space
- Soundproof Server Racks decrease noise up to 28.7dB(A), which is the equivalent of taking freeway noise levels down to library-quiet. Also disperses up to 7kW of heat. Employees can concentrate better, leading to increased productivity and less physical strain from excessive noise

**Best For:** Data centers and standalone applications with heat problems.

**Price:** Starts at \$5,633 (Air Conditioned Server Rack) and \$5,249 (Soundproof Server Rack)

**Contact:** (866) 207-6631 | [www.rackmountsolutions.net](http://www.rackmountsolutions.net)

## Rackmount Solutions Network Cable Bundle Server Rack



Need to secure a rack with a serious number of cables? Rackmount Solutions' Network Cable Bundle Server Rack solves all problems. With a roomy interior up to 28 inches, you can set your rails to 19 or 23 inches and slide left, right, or center to allow for your cabling needs. Rails slide front to back and side to side for maximum flexibility. The unit is available as an open rack or with doors, side panels, and tops for security/aesthetics.

- Compatible with all leading servers, including blade servers
- Allows up to 10 inches of cabling space between side panel and rail
- Use as an open rack or add security with locking side panels and doors

**Best For:** Data centers and standalone applications needing to integrate quantities of cable drops.

**Price:** Starts at \$1,115

**Contact:** (866) 207-6631 | [www.rackmountsolutions.net](http://www.rackmountsolutions.net)

Do you have a  
**NEW**  
**PRODUCT**  
that data center/IT  
managers would be  
interested in  
learning about?

Send your press release or  
related product information  
to [press@processor.com](mailto:press@processor.com).



BUYING TIPS:

# Data Center Cleaning Services



**CLEANLINESS IS IMPORTANT**, and never more so than when talking about your company’s data center. As Rich Hill, president of Data Clean Corp. ([www.dataclean.com](http://www.dataclean.com)), points out, “Application of ISO 14644-1, Class 8, and management of coarse and fine particles suggests that a data center should be as clean as possible.” This means that any contracted cleaning service must be equipped to “remove visible contamination for aesthetic value and remove coarse and fine contamination, which, if disturbed, could reasonably contribute to excessive airborne contamination,” Hill says.

**Experience required.** Not all cleaning is created equal. Although janitorial services may do an excellent job of keeping offices and workspaces free of standard-fare workplace debris, they are usually not equipped to clean data centers, an undertaking that requires specialized training and years of experience. “A professional data center cleaning company will be one that has many years of experience cleaning data centers, utilizes industry standards for cleaning, and can provide assistance with customized maintenance plans for your particular site,” says Kevin Vickery, president of ProSource Mission Critical Services ([www.team-prosource.com](http://www.team-prosource.com)).

Typical services should include sub-floor plenum cleaning, raised floor cleaning, equipment surface cleaning, ceiling cleaning, and subfloor concrete encapsulation. A professional data center cleaning company will be dedicated to providing these kinds of services, whereas even the best janitorial service will not be able to provide them.

**Pricing.** Hector Gallardo, senior account manager at Plenum Cleaning Services ([www.plenumcleaning.com](http://www.plenumcleaning.com)), notes that whereas you can expect to pay from 50 cents to \$1.20 per square foot for professional data center cleaning, few commercial janitorial services could provide those services at any price. Gallardo also cautions against taking the inexpensive way out: “The lowest bid is not necessarily providing the level of service you want and need,” he notes.

**Due diligence.** Gallardo further recommends asking whether the cleaning company’s workers are full-time employees or contracted temps, requesting a demonstration, and asking for a customer satisfaction guarantee. Keep in mind the following:

Get a detailed scope of work, including insurance, equipment, and materials; ask if employees are background-checked and drug-screened; check inside the plenum and on the underside of the access floor tiles for cleanliness; ensure that all tiles are lifted and cleaned on all sides, especially concrete-filled waffle tiles, which often have concrete residue from the manufacturer and other contaminants; and do not allow anyone to use liquids (or machines that require liquid) to clean your data center. Last but not least, says

Gallardo, be sure to periodically check the work in progress.

**Keep it clean.** Once your data center is cleaned to your satisfaction, you should do your part to ensure that it stays as clean as possible, Hill says: Don’t allow food or drink in the data center, place contamination control mats at all entrances, and don’t allow dirty carts or materials inside the data center. If drilling inside is necessary, appropriate safeguards must be employed to limit migration of contaminants. **P**

## BUYERS’ CHECKLIST

- ✓ Get a detailed scope of work.
- ✓ Require that employees be background-checked and drug-screened.
- ✓ Check the work in progress periodically.
- ✓ Do not allow the use of liquids of any kind to clean your data center.

## KEY TERMS

- Airborne contamination.**  
Gaseous and particulate contamination that can lead to equipment failure; often gauged by particulate sampling.
- ISO 14644-1.**  
An international standard for cleanrooms and controlled environments.
- Particulate migration.**  
The movement of contaminants from one sector or piece of equipment to another, often as a result of the contaminant changing form as it’s crushed and spread.
- Plenum.**  
An enclosed space (often beneath floors or in ceilings) used for HVAC, cabling, etc.



BayTech®

IIII

www.baytech.net

33 Years Made in the USA

Going Green!!!

Power Factor is Real

and now it's Real-Time with the MRP Power Solution

Reach operational efficiency and conform to new Green Energy standards with the MRP outlet monitoring solutions.

BayTech's metered outlet modules report Amps, Voltage, VA, Watts, power factor and efficiency per receptacle.

Through our secure SNMP engine thresholds can be set to help identify equipment that is running inefficient.

Standard Features

- Single Phase and Three Phase
- 20,30,50,60 Amp Support
- On, Off, Reboot option
- HTTPS, SSH, SSL Access
- Radius, TACACS Authentication
- Tool less Mounting

Unique Features

- Modular Design
- All Receptacles Monitored
- Power Factor per Outlet
- kW Hour Meter per Outlet
- Current, Voltage and VA and Watts
- Reliable PCB Power Distribution
- Fail Functional Design

Metered Outlet - MRP

Additional Unique Features

CTK4 0A-B

MAX LOAD 16A/208V

ON

20

OFF

All Circuit Breakers Monitored

Most metered power solutions only monitor input power. BayTech monitors all circuit breakers and reports via SNMP when thresholds are met.

Outlet Metering with Efficiency

Monitor individual outlets and receive current, watts, and volt-amps. Continuously monitoring equipment for efficiency with power factor.

Locking C13 Receptacle Optional

Reliable integrated locking clips assure power cord retention. Unique to the industry and does away with nuisance wire clips.

Reliable PCB Power Distribution

ISD's (Insulation Displacement) connectors are faulty and unreliable! All BayTech power solutions use reliable PCB power distribution.

B

A

SENSOR INPUTS

Integrated Sensor Inputs

Eliminate the need for extra environmental monitoring devices. All BayTech power solutions offer two ports for external temperature and humidity probes.

Bay Technical Assoc. Inc. 5239 A Avenue Long Beach, MS 39560 Tel: 228-563-7334 Fax: 228-563-7335 sales@baytech.net

800-306-2199 www.digilant.com/pcm

Reliability-Performance-Affordable Price

NO EXCUSE, NO COMPROMISE

Digilant's NAS and iSCSI Storage Servers provide your business a more efficient and economical way for data storage. By utilizing high performance RAID controllers and powerful server platform, our Storage Servers deliver robust data protection for your business. The easy-to-use software helps you manage your ever-expanding data with ease.

Solid State Storage 2U - 24 Bay

Starting at \$9,925

- Data Capacity from 3TB to 12TB
- 24 Hot-Swappable 2.5" Solid State Drive Bays
- Adaptec RAID Controller
- RAID 0, 1, 10, 5, 6, 50, 60 Supported
- Support up to two Quad-Core Xeon Processors
- Dual Gigabit Network Cards
- Windows Storage Server 2008 R2 or Linux OS

8U - 81 Bay

Starting at \$15,995

- Data Capacity from 40.5TB to 243TB
- 81 Hot-Swappable SATA/SAS Drive Bays
- Adaptec RAID Controllers
- RAID 0, 1, 10, 5, 6, 50, 60 Supported
- Dual Quad-Core Xeon Processors
- Dual Gigabit Network Cards
- Windows Storage Server 2008 R2 or Linux OS

1U - 4 Bay

Starting at \$1,965

- Data Capacity from 2TB to 12TB
- 4 Hot-Swappable SATA/SAS Drive Bays
- Adaptec RAID Controller
- RAID 0, 1, 10, 5, 6 Supported
- Support up to two Quad-Core Xeon Processors
- Dual Gigabit Network Cards
- Windows Storage Server 2008 R2 or Linux OS

2U - 12 Bay

Starting at \$4,035

- Data Capacity from 6TB to 36TB
- 12 Hot-Swappable SATA/SAS Drive Bays
- Adaptec RAID Controller
- RAID 0, 1, 10, 5, 6, 50, 60 Supported
- Support up to two Quad-Core Xeon Processors
- Dual Gigabit Network Cards
- Windows Storage Server 2008 R2 or Linux OS

3U - 16 Bay

Starting at \$4,550

- Data Capacity from 8TB to 48TB
- 16 Hot-Swappable SATA/SAS Drive Bays
- Adaptec RAID Controller
- RAID 0, 1, 10, 5, 6, 50, 60 Supported
- Support up to two Quad-Core Xeon Processors
- Dual Gigabit Network Cards
- Windows Storage Server 2008 R2 or Linux OS

4U - 24 Bay

Starting at \$5,675

- Data Capacity from 12TB to 72TB
- 24 Hot-Swappable SATA/SAS Drive Bays
- Adaptec RAID Controller
- RAID 0, 1, 10, 5, 6, 50, 60 Supported
- Support up to two Quad-Core Xeon Processors
- Dual Gigabit Network Cards
- Windows Storage Server 2008 R2 or Linux OS

4U - 36 Bay

Starting at \$7,850

- Data Capacity from 18TB to 108TB
- 36 Hot-Swappable SATA/SAS Drive Bays
- Adaptec RAID Controller
- RAID 0, 1, 10, 5, 6, 50, 60 Supported
- Support up to two Quad-Core Xeon Processors
- Dual Gigabit Network Cards
- Windows Storage Server R2 or Linux OS

For more information or to place an order, please call us at 800-306-2199 or visit us on the web at www.digilant.com/pcm

GSA

Device Technologies, Inc.

Protecting Critical IT Equipment

Spring-Fast® SL Series Flexible Grommet Edging

Fast-Drop™ Fiber Bend Radius Module

Protect-Fast™ Cable Wrap and Sleeving

Seal-Fast™ Plate and Edge Seals

Benefits

- Protects and manages fiber, wire, and harnesses from abrasion
- Snaps on, holds fast. No adhesives, reduces installed costs

Qualifications

- UL 94V-0
- Telcordia GR-63-CORE
- Compliant to NEBS and BICSI

Applications

Data storage, computer servers, central office, switches, base stations, patch panels, FTTP/FTTH, control boxes, racks and chassis, control centers, sub floor "snake pits"

DT device technologies, inc.

Tel: 1-508-229-2000




www.devicetech.com/IT



All brands and product names, trademarks or registered trademarks are property of their respective companies. Intel, Intel Logo, Intel Inside, Intel Inside Logo, Celeron, Xeon, and Xeon Inside are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.



PRODUCT SPOTLIGHT

# Data Center Cleaning Services

|             |   |   |  |
|-------------|---|---|--|
| Company     | Controlled Contamination Services   | Data Clean  | Data-Tec Systems   |
| Description | <div><p>Specializing in working with data centers of all sizes, Controlled Contamination Services can clean the most sensitive components to rid your data center of fine particles, residue buildup, and other contaminants. Professionals will clean server rooms with the latest micro-cleaning techniques. Controlled Contamination Services performs background checks on its own employees to ensure that your facilities and equipment are in the right hands.</p><ul style="list-style-type: none"><li>Services for UPS rooms, computer rooms, and network control centers</li><li>Proper cleaning materials reduce electrostatic charges and protect sensitive environments</li><li>Cleaning services also disinfect raised floor areas and command centers</li><li>Removes dust that air filters can't catch</li></ul><p><b>Best For:</b> Data centers with sensitive equipment that needs cleaning.</p></div> | <div><p>For more than 30 years, Data Clean has been trusted by thousands of controlled environments worldwide. Data Clean specializes in maintenance and the identification, cleaning, and remediation of contamination that costs you where it counts: reduced productivity, customer satisfaction, downtime, and lost revenue.</p><ul style="list-style-type: none"><li>Specializes in controlled environments: data centers, computer rooms, and cleanrooms</li><li>Full-service branches located in the United States, Canada, Mexico, Saudi Arabia, and Asia</li><li>Flexible scheduling 24/7</li><li>Dedicated workforce of highly trained and uniformed technicians</li><li>100% satisfaction guarantee</li></ul><p><b>Best For:</b> Data centers that demand detail-oriented cleaning, regular maintenance, and post-construction cleaning.</p></div> | <div><p>Data-Tec Systems specializes in servicing a variety of IT-related facilities, including computer rooms, server rooms, print facilities, MDF rooms, item processing rooms, and even general office areas on raised flooring. Data-Tec Systems has been providing maintenance services since 1991 and can care for equipment, tile, subfloor, and access floor cleaning as a complete package. Data-Tec Systems employs trained technicians who know how to manage delicate IT equipment while cleaning data center rooms.</p><ul style="list-style-type: none"><li>Periodic computer room exterior shell cleaning</li><li>Access floor tile surface cleaning with pretreated, environmentally safe cleaners</li><li>Subfloor tack cloth wipe-down</li><li>Access floor installation and replacement</li></ul><p><b>Best For:</b> Data centers that utilize multiple rooms.</p></div> |

|             |  |   |  |
|-------------|--|---|--|
| Company     | Premier Solutions Co.  | ProSource Mission Critical Services   | Sealco   |
| Description | <div><p>Since 1997, Premier Solutions Co. has provided DCM (Data Center Maintenance) to the industry, gaining a 97% Excellent rating along the way and generating a 99% client retention rate over the past five years. Premier Solutions Co.'s comprehensive approach to DCM eliminates contaminants within your data center environment, protecting your valuable IT assets from the intrusion of particulates such as dust and dirt. Boasting an extensive crew training program, Premier Solutions Co. conforms to ASHRAE TC9 specifications, has adhered to a 100% uptime policy, and has cleaned more than 10 million square feet of data center flooring. We exceed your expectations!</p><ul style="list-style-type: none"><li>Cleans raised floors, subfloors, hardware, and servers, including high-density servers</li><li>IDF/MDF rooms</li><li>Ceiling tile cleaning</li><li>Green Seal-approved products</li><li>Onsite cooling/power assessment</li></ul><p><b>Best For:</b> Enterprise-level data center operations, co-location companies, and IT operations where security is maintained at the highest levels.</p></div> | <div><p>ProSource offers mission-critical data center cleaning services that consist of multitier, time-sequenced preventive maintenance plans for cleaning the data center's subfloor, raised floor, equipment surfaces, and ceiling areas. ProSource also offers subfloor encapsulation that includes an epoxy coating application to prevent subfloor plenum dust. Additionally, ProSource offers many products to help prevent contamination and static build-up in the data center, such as contamination control sticky mats, bypass airflow grommets and blanking panels, antistatic cleaning chemicals, and raised floor supplies.</p><ul style="list-style-type: none"><li>Standard service options include annual, semi-annual, quarterly, and monthly preventive maintenance service plans</li><li>Customized plans are available to meet the specific needs of individual facilities</li><li>Raised floor surface cleaning features Pro-Tek and Microfiber Flat Mopping System</li></ul><p><b>Best For:</b> Data centers that want to prevent the accumulation of dust and contamination that can cause unwanted downtime.</p></div> | <div><p>Sealco specializes in cleaning and maintaining computer rooms and their support equipment. Whether it's post-construction cleaning or a preventive maintenance program, Sealco's services will allow your data center to meet today's environmental needs at an affordable price. Acknowledging the customer's concern for safety and security, all Sealco technicians receive extensive background checks and training in data center operations.</p><ul style="list-style-type: none"><li>26 years in the data center cleaning industry</li><li>Permanent full-time employees are background-checked and drug-tested both before and during employment</li><li>AirSeal bypass airflow programs designed to decrease energy consumption and increase infrastructure capacity</li><li>Full line of computer room products</li><li>Zinc whisker remediation</li><li>Nationwide services</li></ul><p><b>Best For:</b> Any IT environment that needs cleaning services performed on any scale.</p></div> |



PRODUCT SPOTLIGHT

Processor's Product Spotlight highlights options available in key data center product categories, providing product information side-by-side for easy comparison.

GCA Services Group

GCA Services Group does more than simply clean your data center; it offers a host of facility maintenance programs suited for the needs of individual data centers. GCA Services also offers custom Green Cleaning to ensure the health and safety of occupants while ensuring that it uses the most environmentally friendly methods available.



- Services adhere to cGMP techniques, IEST Federal Standards, and ISO Cleanroom Operations Standards
- Maintains bio-pharmaceutical, semiconductor, aerospace, bio-safety, chemical, defense, nanotechnology, and optics environments
- Sterile environment cleaning includes decontamination, disinfection, gown room management, lab support services, and more
- The Green Cleaning program provides custodial effectiveness assessments, sustainable cleaning processes, and certified sustainable chemicals while complying with GREENGUARD and offering Green Seal-compliant products

**Best For:** Environmentally conscious data centers.

Paragon International

Paragon International services more than 30 million square feet of critical environments annually, including medical, pharmaceutical, micro-electronic cleanrooms and data centers. Uniformed, meticulous technicians routinely exceed ISO 14644-1 for cleanrooms and thus help assist clients to cut costs by eliminating downtime. Every staff member is familiar with the hazards associated with critical environments and understands the sensitive nature of data center and cleanroom equipment. All staff members are trained by an Atlanta-based operations team, and there are employees in place to help with critical environment cleaning across the United States. All chemicals used have been custom-formulated for Paragon and are ESD where necessary. Paragon also offers free mini-audits to help assess the health of your data center and offer suggestions on where improvements can be made.



- Post-construction cleaning, access floor cleaning, disaster recovery, equipment cleaning, and microelectronic equipment decontamination
- ESD concrete sealing using custom formulated sealer
- Pre- and post-cleaning environmental reports and particle counts
- Air cooling efficiency auditing and custom cooling solutions
- Pest and rodent remediation

**Best For:** Companies with cleanrooms or critical environments of any sort—data centers, pharmaceutical environments, and medical or critical environment manufacturing.

Plenum Cleaning Services

Plenum Cleaning Services is an experienced data center cleaning company specializing in cleaning and decontaminating every facet of a data center, telecom center, MDF room, IDF room, Network Operations Center, and power and battery rooms in accordance with ISO 14644 standards. Available cleaning services include: plenum, access floor tiles (all sides), access floor frame, pipes, cables, vents, vinyl composition tile floor anti-static wax maintenance (strip, scrub, wax, and burnish), hardware, equipment, cages, fences, overhead cable trays, lights, furniture, and wall fixtures. PCS also offers customized cleaning programs to meet business or budget needs.



- Reduces potential system malfunction and costly downtime as a result of dust and debris build-up
- Improves the density and quality of the air by removing 99.999% of dust, pollen, mold, bacteria, hair, and any airborne particles with a size of 0.12 micron or larger
- Removes hazardous debris such as nuts, bolts, plastic grommets, paper, plastic, cardboard, tape, and lint
- Improves aesthetics
- Provides unsurpassed service and offers a 100% customer satisfaction guarantee
- Prolongs the life of the high pressure access floor, vinyl composition tile floor, and equipment
- References available with written estimate

**Best For:** Preventing system malfunction and costly downtime related to thermal shutdown as a result of components overheating due to dust and debris build-up.

SPEC-CLEAN

SPEC-CLEAN provides continuous maintenance programs and post-construction specialized cleaning that's based on the needs of your data center or critical environment with flexible scheduling and full-time trained technicians. SPEC-CLEAN services include exterior and interior hardware cleaning, HEPA vacuuming of the subfloor, and reconditioning the surface of raised floor and non-raised floor environments. SPEC-CLEAN also provides environmental follow-up site reports, emergency cleaning, and zinc whisker remediation.



- Complete cleaning of exterior and interior of server cabinets
- HEPA vacuuming takes care of dust on exterior cabinets, monitors, and flat surfaces
- Client walk-throughs to ensure that you're 100% satisfied
- Cleaning solutions used are approved for data centers and mission-critical environments

**Best For:** Data center managers who like reliable, detail-oriented deep cleaning.

Specialty Cleaning Services

Specialty Cleaning Services can effectively clean data centers, while also taking care of cleanroom, industrial lighting, acoustical ceiling tile, and post-construction cleaning. Offering five basic services, Specialty Cleaning Services uses HEPA-filtered vacuums, lint-free dust cloths, and sterile cleaning agents to complete commercial cleaning tasks such as exterior hardware cleaning, top-of-floor cleaning, underfloor plenum cleaning, above-ceiling cleaning, air sampling, and environmental reports.



- Heavy-duty cleaning for post-construction facilities
- Cleanroom sanitation for large facilities
- Water-based, nontoxic cleaning materials for acoustical ceiling tile
- Services are available for scheduled intervals throughout the year

**Best For:** Data centers that want detailed, hands-on professional cleaning services.

Do you have a

**NEW PRODUCT**

that data center/IT managers would be interested in learning about?

Send your press release or related product information to [press@processor.com](mailto:press@processor.com).



# Determine The Best Storage Approach

Assess Your Needs & Consult With The Pros To Determine The Best Fit

**NEW STORAGE IN YOUR** small to mid-sized company's data center could be cloud, in-house, or a combination of both. Unless your organization's IT department has current expertise in this important area—or even if it does—it's a good idea to retain the services of a qualified, full-service vendor or consultancy firm.

"Do your homework, but don't over-analyze," says George Crump, senior analyst at Storage Switzerland. "Most vendors have an offering in this space. If [you] talk to everyone, [you] may quickly become overwhelmed."

Crump suggests that you discuss your project with one systems vendor, one new-but-established vendor focused on the mid-range, and one startup.

### Evaluation

When narrowing down your storage options, careful research is invaluable. "The key to successful IT/storage decisions is doing your homework and understanding the dynamics and priorities of your business needs and strategy," says Jonathan Siegal, senior director of product marketing in the Unified Storage Division at EMC (www.emc.com). "There is no single, one-size-fits-all answer."

First, Crump says, your organization should have a clear goal. "Do [you] need more capacity, more performance, better data protection, [or] some or all of the above?" he asks.

Siegal and Crump agree that your organization needs a solid understanding of several things. For example, Crump says, your company "should inventory the type of data you have today—how much is in databases, email, files, etc." Siegal adds that you'll need to be clear on your company's business requirements, business strategy, and networking strategy, including bandwidth requirements and available facilities and services.

Next, equip yourself. "A good [set of] storage analysis tools is always a wise investment prior to purchasing a new storage system," Crump says. "It answers [many] of the above questions and identifies performance problems."

Use the analysis tools to evaluate how you're currently using your IT resources, Siegal says, both in aggregate and by application—via the app itself or at the server or storage level, as applicable.

"It is important to understand the existing/available capacities (headroom), under-utilized storage resources, I/O throughput as a percentage of available based on steady-state and peak loads, and the same characterization in aggregate at the network level," Siegal explains.

Next, give serious thought to how much of the new storage could be in a cloud, whether public (third-party) or private (in-house). Many experts believe private cloud storage becomes more cost-effective than public cloud capacity for data sets larger than 100TB.

### Key Concerns

There are a number of things to keep in mind as you formulate your storage strategy:

- **Data safety.** Keeping your precious data safe is vital to profitability, so be sure to implement redundancy and strong error correction, as applicable.
- **Uptime.** Staying up and running is crucial to business continuity. You need reliable devices and software, along with failover protection (meaning both emergency power and redundant data storage systems). You'll also need round-the-clock support from the vendors, relevant manufacturers, and/or developers.
- **Security.** From user access policy to encryption, and from firewalling to

- malware prevention, data storage security is essential for the future and reputation of your organization.
- **Speed.** How fast your storage works is important, which brings up the topic of SSDs and HDDs. "SSD should have a role in almost every data center," Crump says. "The analysis will help with that decision as to how much." The exact mix of solid-state and rotating disk drives depends on your data center's needs. For instance, providing cloud applications

### Key Points

- You'll need to do some research before a storage upgrade.
- Get professional, reputable help as you determine which storage solutions to implement.
- Focus on not only cost and ROI, but also data safety, availability, security, and speed.

### Get Started

New data center storage requires an investment in time and money. Ballpark costs for a small to mid-sized data center storage upgrade could be "anywhere from \$15,000 to \$150,000," according to George Crump, senior analyst at Storage Switzerland.

"The entry point for networked storage components to support an application environment as well as general user storage is likely to be around \$15,000, scaling up with requirements for larger capacity or more extensive data management capabilities," says Jonathan Siegal, senior director of product marketing in the Unified Storage Division at EMC (www.emc.com). However, he adds, "systems appropriate to consolidating and sharing user data or for archiving of files can be deployed for under \$10,000, and some of these offer the option to add high-availability features later."

requires a different approach to storage performance than serving content such as video. "We suggest looking for ways to leverage SSD across a broad data set via caching, automated tiering, or using VMware's Storage VMotion to migrate performance-sensitive VMs to an SSD appliance," Crump says.

**Manageability.** "Product selection should include evaluation for usability as well as the requisite features," Siegal says. "The incremental software should be complementary to the chosen infrastructure and leverage the vendor's product capabilities." Your organization may require new software for storage management, data protection, support, and future storage planning, Siegal adds.

**Cost-effectiveness.** Think of your storage capital expenses not only in terms of cost per gigabyte, but also cost per I/Os. Deduplication, virtualization, and

provisioning features can help you avoid wasting money and power on unnecessary drives. "Products with advanced data management features such as thin provisioning of storage can help reduce initial deployment costs based on efficient use of capacity," Siegal says. As for your operating expenses going forward, bear in mind that power-efficient systems translate to low cost of operation. Systems that are less efficient not only require more power to run, but generate more heat, which has a knock-on effect on your cooling costs.

**Scalability.** Whichever path you take in your storage quest, make sure that the result will let your data center grow with your organization's needs. "In many cases," Crump says, "[storage analysis] software can also provide insight into data and performance growth rates so [you] know how scalable a system [you] should buy."

### Implementation

For most organizations, implementation requires third-party help. That doesn't mean, however, that you should sit back and let the vendor or consultants do all the work.

"We recommend being as involved as possible since it makes transition to ownership of the system easier," Crump says. "In some cases, though, that is not realistic because there are not enough people resources available to sit through the implementation."

IT personnel that have helped roll out the changes will be easier to train, too, and can help train others on the new system. Before you know it, your upgraded data center will be better than ever. ■

### Action Plan

- Evaluate your organization's needs.
- Enlist expert help.
- Decide on an approach.
- Implement the solution.
- Train your personnel on the new system.

### Top Tips

- ✓ When you're considering any significant infrastructure changes related to storage, take the opportunity to look at consolidation and/or virtualization of your storage resources, says Jonathan Siegal, senior director of product marketing in the Unified Storage Division at EMC (www.emc.com).
- ✓ George Crump, senior analyst at Storage Switzerland, thinks a hybrid model makes the most sense when it comes to data center storage these days. He defines it as some data onsite backing up first to disk, then archiving to tape with a replication to another disk in a disaster recovery site or to a cloud storage provider. "The relevant mix is dependent on the capabilities of the organization to provide and maintain their own DR site," Crump adds. "The less [capability], the more likely we would recommend a replication to a cloud storage provider."
- ✓ "Solid-state drives . . . have been proven to be a good solution for demanding applications with high I/O profiles," Siegal says. "More importantly, some vendors have embraced SSDs as a tiered element in their storage systems to handle hot data and automatically rebalance the workload/data location as the data profile changes."

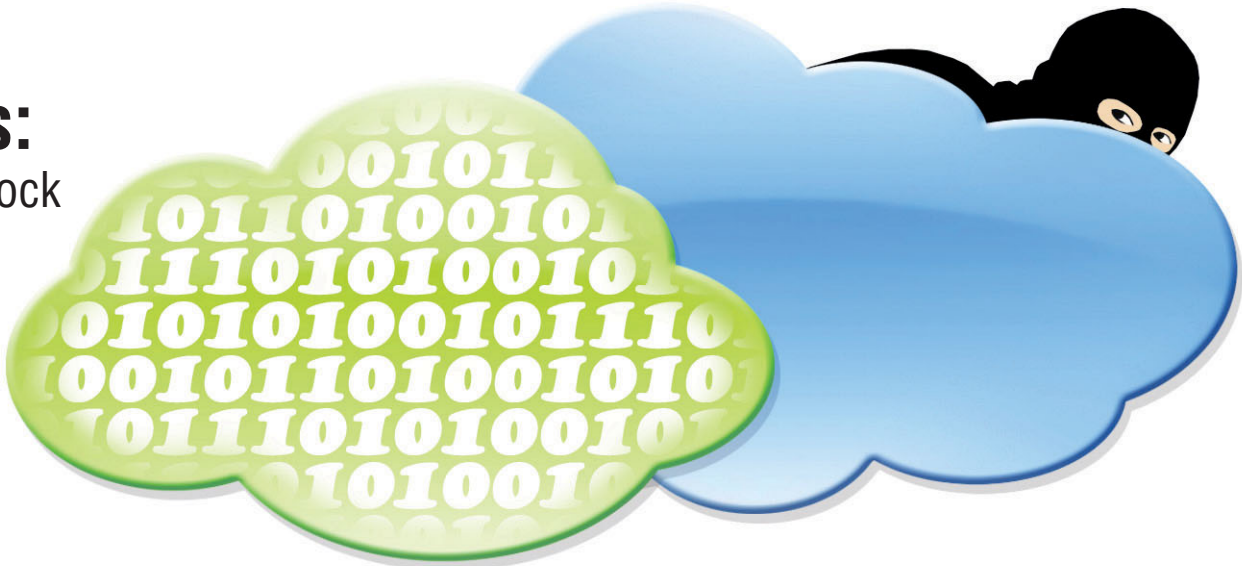




CLOUD TIPS & TRICKS

Cloud Security Concerns:  
Data Security Remains A Stumbling Block  
For Cloud Implementation

CLOUD COMPUTING HAS BEEN TOUTED as the future of data storage, but like any heavily hyped technology, it comes with some red flags. The No. 1 caveat with cloud computing is security: How can enterprises ensure the safety of their valuable data?



Public vs. Private Cloud Security

There are cloud-computing security risks in both public and private cloud settings, though most come from the public cloud sector, where company data is stored at an external resource, says Mark A. Gilmore, president of Wired Integrations (www.wiredint.com). “The biggest risk here is the breach of security on that data,” Gilmore says.

“With private clouds, the risk assessment should be geared more toward ensuring that the cloud partners’ access to internal network infrastructure is limited to the task at hand and no more. Not properly locking things down could expose the infrastructure to unwanted breaches from the inside.” Another concern is the possibility of a hacker breach against public cloud

systems used by enterprises employing infrastructure-as-a-service or platform-as-a-service cloud storage, says Kevin Rowney, director of breach response for Symantec (www.symantec.com). “It’s often in the later stages of planning that security issues around protection against data breach and compliance matters enter into the conversation,” Rowney says. “Organizations need stronger information governance for managing corporate information and enabling confidence in the cloud.”

Knowledge Is Key

That doesn’t mean, however, that you shouldn’t do lots of due diligence before you choose a cloud infrastructure provider. “Preparation for the deployment [of cloud storage] is at least 80% of the battle,” Gilmore says. “If you leave this piece up to the provider, you are asking for trouble.”

Another way to minimize risk of a breach is to also research the technology being used on both the provider’s end and yours. “Utilize only trusted and validated virtual appliances and ensure that people configuring virtual firewall and network settings understand the technology they are using,” says Philip C. Cox, director of Security and Compliance at SystemExperts. There are other preventive measures you can take in-house. Symantec’s Rowney recommends adopting an information-centric approach to identify the top categories of sensitive content and develop data loss protection-based detection rules to detect that data. “Organizations can then triage out their workloads into levels of risk depending on the data they process,” he says. “Modern data loss prevention systems are now quite capable of providing such diagnoses. Scanning these systems for sensitive data is a proactive way to reassure the rest of the enterprise that the workload placement is appropriate.”

Prepare For The Worst

What if the worst happens and a breach occurs? If it is a private breach, sever the connection to the cloud provider immediately and then determine how the breach occurred so that it can be dealt with, says Mark A. Gilmore, president of Wired Integrations (www.wiredint.com). If it is a public breach, you’ll need to work with the provider to determine what happened and how best to minimize the damage. Have agreements in place so that everyone knows what’s to happen if a breach occurs. Most of all, be careful of what you put out there. “Don’t put anything into a public cloud that contains any sensitive information that, if exposed, would put the company at risk,” Gilmore says.

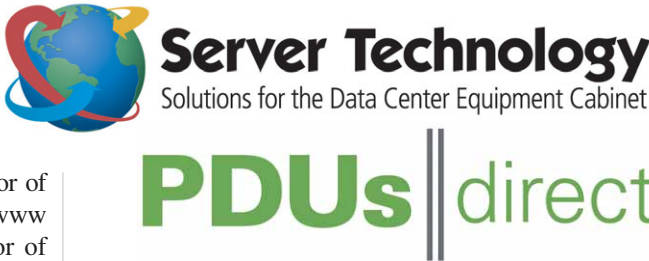
FEATURED PRODUCT

Products Prepared For Real-World Use

Server Technology & PDUs Direct Know The Importance Of Product Testing

MOST COMPANIES PERFORM some form of testing on their products to ensure that they are in good working condition before being shipped to customers, but Server Technology, experts at producing the highest standard of quality PDUs, goes above and beyond basic testing with its 100% Product Performance Testing. The process includes putting each product through a series of tests designed to push it to its limits, which results in high-quality products with low failure rates. The reason Server Technology decided to perform these tests on every product for 27 years is much simpler than you may think. “The worst thing for a customer is to open a box, plug a product in, and it doesn’t work,” says Jim Scherr, director of sales and operations at PDUs Direct (www.pdusdirect.com), the master distributor of Server Technology PDUs. “The overarching reason for doing the power testing is simple: to make sure that any product that leaves our building functions as per designed and meets all the criteria of the customer. We’re committed to always providing the quality and value that our customers expect.” The first and foremost benefit of Server Technology’s 100% Product Performance Testing is that customers can have peace of mind knowing that the products powering their mission-critical devices work as

designed and have less of a chance to fail, according to Scherr. Server Technology’s major goal is to help keep their customers’ physical infrastructure up and running so they can be as productive as possible. Testing From Beginning To End With 100% Product Performance Testing, it isn’t just a matter of testing a product after it’s completely built. In fact, these products are tested throughout the manufacturing



process to make sure any possibly defects or other issues are caught early on to prevent a potential domino effect later down the line. And if a product fails at any step along the way, changes are made and the testing process at that level starts all over again. “It’s good for us to know early on if there’s a problem because we can fix it here at our manufacturing facility, which is so much better and quicker than trying to fix issues or problems in the field,” Scherr says.

The variety of tests performed on the products run the gamut from thermal, shock, and vibration testing to compliance with ATE (Automated Test Equipment) tests, as well. It all leads to the final tests, which are designed to test the product in real-world applications and make sure they are ready for the customer once and for all. All tests are performed in a state-of-the-art Power Lab. “All products are tested at all stages, starting from when the product is in its infancy to when it has become finalized,” Scherr says. “Just before it goes out the door after the final modification, we test it once again. We don’t just test it by plugging it in and making sure the lights come on; we plug it in and we load every receptacle. We just want to make sure

that, functionally, the product fully works under the conditions it will see in the future.” A Partnership Between Manufacturer & Customer PDUs Direct sells a wide variety of Server Technology products, including basic, switched, and metered Rack PDUs, and all of them go through the 100% Product Performance Testing process. It’s a combination of well-built, easy-to-use products and a

degree of testing that isn’t often seen in the IT industry. Current customers notice this because, according to Scherr, they “really appreciate the due diligence being done prior to them getting the products.” And Server Technology, along with PDUs Direct, sees its relationship with customers as a mutual partnership, which is why 100% Product Performance Testing was put into practice in the first place. These companies strive to provide the best products available with the highest amount of testing and lowest failure rates so that their customers can focus on running their businesses instead of fixing infrastructure issues. “The quality, reliability, and performance of our products are the most important benefits—to our customers and to us,” Scherr says. “It’s what we’ve built the company on and what we stand for every day.”

SERVER TECHNOLOGY  
100% PRODUCT  
PERFORMANCE TESTING

(800) 835-1515  
www.servertech.com

Tests products at every step, from inception to production to sale, to ensure the highest quality and lowest failure rates possible.



# Conduct A Security Audit

Gain Compliance & Protection For Your Company

**IF YOU'D NEVER LEAVE** your keys in the ignition while grocery shopping or your front door open while on vacation, you should be just as reluctant to risk the security of your IT infrastructure. The best way to put a deadbolt on your network, computers, and valuable company data is to conduct regular security audits.

According to Brian Johnson, assistant marketing manager at Tools4Ever ([www.tools4ever.com](http://www.tools4ever.com)), the largest benefit of performing a security audit is compliance with industry rules and regulations. But even organizations without industry rules and regulations to follow have much to gain from a security audit, including protecting IP and company data, maintaining uptime on critical systems, and maximizing profitability.

The most vital first step is to get the management team on board with the audit. According to Johnson, without management buy-in, "auditing practices can be put aside, determined [to be] lower priority, etc." The folks holding the purse strings have a stake in making the enterprise secure, but it's typically up to the security and IT personnel to make the case. If you can effectively communicate that, Johnson says, "you ensure that the security audit has the commitment and sponsorship to ensure the audit is completed."

✓ **Assume It's Broken**

Any successful security audit needs to start with the assumption that there are gaps in the security protocol as it currently exists. Don't be lulled into a false sense of security; even recently addressed vulnerabilities should be thoroughly revisited. "In order to begin a security audit, security professionals need to be willing to expose themselves to the possibility that current steps and protection may not be enough," says Johnson. "By being open to this possibility, they ensure that they will receive truthful findings that will ultimately improve the organization's network security."

Generally speaking, a smaller audit is going to be less resource-intensive, so consider creating a focused security perimeter, or a list of the assets you want to ensure are protected that excludes those that are less of a threat.

It's also important to clearly define the audit's objective, whether you're conducting a security audit of a single remote worker or an audit of the entire enterprise. The kind of security audit you plan to perform will determine how you proceed.

For instance, a hardware-centric security audit will start with a comprehensive list of hardware and the ways in which each device is used and whether or not they have access to the network. It's also imperative to look into the firmware revisions currently installed on the devices to ensure that there are no device-specific security holes.

For a network-centric security audit, IT professionals can omit any devices incapable of accessing the network, but they should prioritize the devices with the most direct access to critical assets,

particularly devices with unfettered administrator rights or full network access.

A software-specific security audit, on the other hand, will focus instead on updating servers, clients, and devices to the most current software versions. It's important to also look seriously at eliminating outdated or at-risk applications wherever possible.

According to Johnson, it's important to make your security practices practical for end users. "Audit for how systems work as well as employee behavior. For example, you may have the strongest possible security measures in place, but if password practices are complex and convoluted, you may find [that] employees are writing passwords down on sticky notes and leaving your network vulnerable to unauthorized access."

As you define the audit boundaries, keep a running tally of the expected personnel resources, time commitment, costs, and auditing methods necessary to complete the audit.

After you create a list of your assets, it's time to make a definitive list of the threats to which your proposed audit area is exposed. Some common threats include computer and network passwords, physical assets, records of physical assets, data backups, data access logs, sensitive customer data, client lists, long-distance calling, and email. Your list of risks will vary depending on the focus of the audit, but try to be as comprehensive as possible.

✓ **Tools, Services & Programs**

Regardless of the kind of audit you're trying to perform, there are dozens of businesses with services and software aids designed to help you make the most of your audit, and looking into these can save time and money.

Johnson recommends UMRA (User Management Resource Administrator) software, which is capable of easing network-wide user account management processes. Some UMRA software also records and reports on any user account changes, when the changes were made, who made the changes, and which specific records were affected by the changes. Johnson also

## Action Plan

- Define the scope of the security audit
- Get management buy-in
- Create an asset list
- Create a threats list
- Prioritize the most important assets at the most risk
- Execute the security audit
- Begin planning/scheduling for the next security audit

## Get Started

There's no one-size-fits-all security audit, and as such, the manpower, resources and budget requirements for your audit will be unique. Seek out security service providers and software developers to help reduce those upfront costs. It's also a good idea to see how your competitors are coping with the same risks.

## Top Tips

- ✓ Don't assume a security audit can wait.
- ✓ Always assume you're vulnerable.
- ✓ Seek out products or services to reduce costs.

## Key Points


- Limiting the security perimeter can be an effective way to reduce the costs of an audit.
- Obtaining management buy-in early can ensure that the security audit completes on schedule.
- Comprehensive lists of assets and threats will help flesh out the security audit.

recommends IT professionals look into SSRPM (Self Service Reset Password Management) software, which gives network administrators much greater control over who can access the network.


Another useful tool comes in the form of a spam filter, either in the guise of a server-side add-on, or as a dedicated appliance. Other auditing utilities or services include backup and logging, encryption, network access control, intrusion prevention, firewall, identity and access management, and security for the physical premises.

✓ **Pitfalls To Avoid**

One of the worst things you can do regarding an audit is to assume that it can wait. "No organization is immune to [threats]. [Establishing] regularly scheduled audits, which should result in recommendations for continued protection, is the biggest step an organization can take," says Johnson. In order to prevent the postponement or denial of a proposed security audit, Johnson recommends obtaining management approval "six to 12 months in advance so that the commitment is made and cannot be moved around."

The costs involved in performing a security audit are typically minimal, though they can vary widely based on the amount of equipment that falls within the audit's security perimeter. The biggest costs are in time, manpower, and shoring up any aspects of the enterprise that are significantly lacking in security provisions. Sometimes software vendors and service providers can offer competitive rates for performing security audits, so don't rule them out if time and resource necessities appear to be too great a burden. 





The Smart Choice for Text Retrieval® since 1991

# dtSearch®

## Instantly Search Terabytes of Text

"Bottom line: dtSearch manages a terabyte of text in a single index and returns results in less than a second" – InfoWorld

"Covers all data sources ... powerful Web-based engines" – eWEEK

"Lightning fast ... performance was unmatched" – Redmond Magazine

For hundreds more reviews & developer case studies, see [www.dtSearch.com](http://www.dtSearch.com)

**Highlights hits** in a wide range of data, using dtSearch's own file parsers and converters

- Supports MS Office through 2010 (Word, Excel, PowerPoint, Access), OpenOffice, ZIP, HTML, XML/XSL, PDF and more
- Supports Exchange, Outlook, Thunderbird and other popular email types, including nested and ZIP attachments
- Spider supports static and dynamic web data like ASP.NET, MS SharePoint, CMS, PHP, etc.
- API for SQL-type data, including BLOB data

**25+ full-text and fielded data search options**

- Federated searching, advanced data classification objects, and special forensics search options

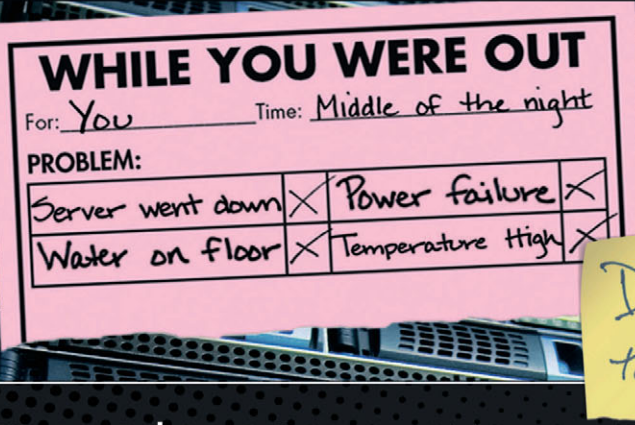
**APIs for C++, Java and .NET through 4.x**

- Native 64-bit and 32-bit Win / Linux APIs; .NET Spider API
- Content extraction only licenses available

|                     |                          |                       |
|---------------------|--------------------------|-----------------------|
| Desktop with Spider | Publish (portable media) | Engine for Win & .NET |
| Network with Spider | Web with Spider          | Engine for Linux      |

Ask about fully-functional evaluations!

[www.dtSearch.com](http://www.dtSearch.com)    1-800-IT-FINDS



**WHILE YOU WERE OUT**  
For: You    Time: Middle of the night  
PROBLEM:  

|                  |   |                  |   |
|------------------|---|------------------|---|
| Server went down | ✗ | Power failure    | ✗ |
| Water on floor   | ✗ | Temperature High | ✗ |

  
*Did you get the message?*

Sensaphone Remote Monitoring Products use *redundant communication paths, built in battery backup, and supervised sensors* to make sure that when something goes wrong in your computer room

**...YOU GET THE MESSAGE**

**Notification Via:**

- Voice Phone Call
- E-Mail
- Text Message
- SNMP Trap
- Pager
- Fax

Now with **Wireless Sensors**



Get your **FREE** application guide now

**SENSAPHONE®**  
REMOTE MONITORING SOLUTIONS

877-373-2700  
[www.sensaphone.com](http://www.sensaphone.com)

MADE IN THE **USA**

# CAN'T HEAR YOURSELF THINK?



## Get One of These



### Soundproof server racks from Rackmount Solutions

Call Toll Free 866-207-6631  
[sales@rackmountsolutions.net](mailto:sales@rackmountsolutions.net)  
[www.rackmountsolutions.net](http://www.rackmountsolutions.net)





**RACKMOUNT SOLUTIONS**  
Focused on U



# Top Data Center Cleaning Tips

Standards & Guidelines In Place To Protect Sensitive Equipment & Data

**LIKE ANY ROOM** or office space, data centers can get dirty. But data centers are different than most rooms and offices because of the sensitivity of the equipment and data stored within the facility. That means data center managers can't simply hire any outside janitorial service to clean. Instead, they'll want to find a company that specializes in cleaning data centers.

What makes this job different from cleaning any other facility is the servers stored in the rooms.

"The room is very expensive and it's very critical to a company's operation," says Bill Montgomery with Premier Solutions ([www.premiersolutionsco.com](http://www.premiersolutionsco.com)). "It's also a secure environment. Not just anybody can go into the room."

### Cleaning Guidelines

Montgomery explains that having a data center cleaned is a big deal. "It has to be done a certain way, at certain times, and following certain protocols," he says. "The client has invested a lot of money to make sure the center is efficient, so when you are doing a process like cleaning, you want to make sure you don't disrupt it."

All data centers need to follow strong standards and guidelines for maintaining cleanliness and for ensuring the facility

### Key Points

- Having your data center cleaned is a big deal because it needs to be done a certain way, at certain times, and following certain protocols.
- All data centers should follow strong standards and guidelines for maintaining cleanliness and to ensure the facility is protected from all forms of contamination.
- The primary goal of the cleaning staff is to get rid of the loose particulates to keep the dirt and dust particles out of the servers.

these standards as a guideline to follow to protect the equipment. The utilization of a standard will help ensure the data center's cleanliness is both maintained and measured on an ongoing basis."

The primary goal of the cleaning staff is to get rid of the loose particulates in order to keep the dirt and dust particles out of the servers. Montgomery warns that too much dirt in the servers can cause them to overheat.

### Where To Start

The actual cleaning process will depend on the type of floor in the data center. "You have the raised floor, which is on a 12- to 16-inch grid with anti-static squares that fit

cool air in that subfloor, it causes the loose particulate to go up into the room and into the server," Montgomery says. Montgomery's company uses self-contained HEPA vacuum cleaners. "We take the vacuums down to the subfloor and vacuum the particulate off as much as possible."

After cleaning the plenum, Montgomery moves to the top of the floor to clean with a four-step process. This allows the anti-static properties to work correctly in the tiles. To clean the server cabinets, anti-static clothes are used.

"Whenever we can eliminate the loose particulate, we focus on that area to get rid of it," Montgomery says.

### Seek Out Cleaners With Experience

Relying on your IT crew to clean the data center isn't always feasible because the staff is usually small and is trained to run the operations. Montgomery recommends hiring an outside firm that specializes in cleaning data centers. A janitorial company isn't properly versed on cleaning such a particular and sensitive environment.

Although an outside firm specifically trained in the sensitive art of data center cleaning is the best option, your staff can do its part to ensure the data center is properly maintained between cleanings. "The most

check," says Montgomery. But the cleaning company should also conduct thorough background checks of its employees.

The employees hired by a data center cleaning company need to be more skilled than a typical janitorial crew. It helps if they have some technological knowledge or truly understand the equipment they are working around. For example, if cleaning personnel are unfamiliar with something like fibre cable, they might mishandle it and end up creating serious problems. ■

### Cleaning Tips

The best approach for achieving a clean data center is to have standards and guidelines in place that provide for cleaning on an ongoing basis. To do that, Premier Solutions' Bill Montgomery provides a few tips.

- Hire an experienced, knowledgeable cleaning company. The personnel should have solid training on how to clean sensitive equipment and understand everything they will encounter, from the power sources to the servers. Also make sure the company's primary business involves data centers. References are important.
- Schedule cleanings regularly. The subfloor should be inspected and tested at least once a year to identify the types of particulates on equipment. "If we find corrosives, that's an alarm," Montgomery says. "That means humidity in the room could be out of balance. A black type of particle could mean carbon in the room, which is bad for the server." The top of the floor should be cleaned quarterly and the subfloor once or twice a year.
- Clean cabinets and servers at the same time as the subfloor. This makes it easier to monitor how the room is staying clean.
- Once the room is clean, use best practices to keep dirt particles out. Clean step mats will take dirt off shoes. Avoid bringing cardboard pallets into the room, because they can be dirty and pollute the area. Montgomery says you should clean any new equipment before it goes into the room.
- Data center managers should monitor the cleaning process the first few times to make sure there is a consistent standard in place.

"The most important task the staff can perform is to protect the data center from any kind of contamination and avoid bringing anything in . . . that can be a hazard to the data center's equipment and environment."

- Superior Technology Solutions' John Luludis

is protected from all forms of contamination, explains John Luludis, co-founder and president of Superior Technology Solutions ([www.superiortechnology.com](http://www.superiortechnology.com)). He mentions one data center cleaning standard in particular, ISO 14644-1, which is the international standard for cleanrooms, clean zones, and controlled environments.

"The ISO 14644-1 set of standards are a set of guidelines and benchmarks that achieve various target levels for cleanliness," he says. "Many hardware manufacturers reference

into the grid," explains Montgomery. "And then you have hard tile floor, also with anti-static properties."

From a raised floor perspective, most data center managers are most concerned with having the subfloor, called the plenum, cleaned. It's the area where you'll find equipment such as the fire and water alarms, airflow detection, fiber cabling, and the connections that go to the system. It's also where a lot of the particulate resides. "Because a lot of the air conditioning systems are running

important task the staff can perform is to protect the data center from any kind of contamination and avoid bringing anything in . . . that can be a hazard to the data center's equipment and environment," says Luludis.

Due to the sensitive nature of the data stored on servers, anyone hired to clean the data center needs to go through some kind of security screening. The type of screening will be based on the client. "If it's a government facility or a high-security company, the data center may do its own background

### China Makes Push Toward HPC

The Chinese Ministry of Education announced recently that it will begin offering Nvidia's Cuda (Compute Unified Device Architecture) at 200 universities and will be training about 20,000 students per year to use the architecture. The nation's move to beef up its parallel computing capabilities is likely driven by a desire to bolster its supercomputing abilities and to grow its outsourcing industry. Cuda allows developers to adapt their programs for parallel environments using common programming



languages. Training for the architecture is currently available in just four universities in China and about 500 universities worldwide. Nvidia, which developed the architecture, announced recently that it plans to release the compiler source code for the platform in order to expand support for other programming languages.

### Health IT Adoption Up In Community Hospitals

A new study from KLAS showed that community hospitals are making leaps and bounds in CIS (clinical information system) implementation,

with 52% saying they had contracted with vendors in 2010 to install CIS programs where none existed. The report, titled "Community Hospitals Accelerating CIS Adoption: Community Hospital Clinical Market Share Report 2011," also found that another 36% of those surveyed said they are replacing legacy CIS systems with different vendors. The community hospital arena traditionally lags behind its larger counterparts when implementing CIS systems, which include tools such as physician documentation systems and clinical data repository systems; however, government incentive programs and regulations are spurring healthcare

facilities of all sizes to speed up the move to electronic medical record systems.

### Study Shows Worldwide Prevalence Of Texting, Social Networking

A new survey by the Pew Research Center's Global Attitudes Project made a number of interesting discoveries about the texting and online social networking habits of users from around the world. Cell phone owners from 75% of the countries represented in the survey say they text regularly, and people in poorer countries tended to text with more frequency than those

in wealthier countries; for example, 96% of people from Indonesia said they text regularly, while 67% of people in the United States said the same. Use of social networking sites such as Facebook and Twitter were up substantially in Russia (up from 33% to 43%) and Egypt (up from 18% to 28%); in fact, Facebook was instrumental in facilitating the revolution against former Egyptian President Hosni Mubarak last February. The study also found that social networking use is generally higher in wealthier nations due to the higher rates of Internet access.



BUYING TIPS:

# VPN & Remote Connectivity



**VIRTUAL PRIVATE NETWORKS**, or VPNs, and the remote connectivity that they offer have many benefits for SMEs. Employees can work from home or the road with full access to the data, software, and applications available at the office. And VPNs use security and encryption to protect data transfer from a central location to remote workers and branches so that they can safely work without creating vulnerabilities for the company.

However, VPN and remote connectivity solutions aren’t necessarily dependent on one another. You can have “remote connectivity without a VPN or configure a VPN and limit access to just email,” according to Derek Silva, research analyst at Info-Tech Research. In turn, you can set up a VPN to allow access to all software and applications at the office so remote workers can have the same resources as their in-office counterparts.

Because there are so many different types of solutions and ways to customize a VPN or remote connection, it’s important to research every available option before deciding which products you want to purchase.

**Features and functionality.** The most important things to look at when shopping for VPN and remote connectivity solutions are the core features. You have to make sure that the product supports the number of connections you need, has strong security or support for your existing security settings, features in-depth management tools, and offers support for every type of device employees will use. You also have to decide if you want individual remote connections, such as a one-on-one connection between an office computer and a remote computer, or an entire VPN with multiple clients and connections.

“Any solution should provide administration through a single management console and clientless connectivity,” Silva says. “It should have support for integration with your user directory, the ability to block or allow access to network resources, and comprehensive activity logging.”

Silva also cites extra features, such as personalized Web portals, emergency licensing, and mobile device support, as worthwhile considerations. The key is finding a solution that gives you central control of the entire network, customizable settings, and access to only the software and applications that you designate.

**Maintain or improve your security.** It’s crucial to remember that because a VPN or remote connection is allowing outside access to your network, you need to make sure your company’s security is strong. VPNs do use encryption, but Silva stresses that security should be a major priority and you should make sure the solution’s security settings complement or, at the very least, don’t interfere with your existing settings.

“Since this is a solution that’s providing access to the corporate network from the outside, the features and security should come above most other considerations,” Silva says. “Don’t compromise on existing security policies for the sake of convenience. A good VPN or remote connectivity solution will give you everything you need while maintaining the same, or similar, level of security as being at the office.” [P](#)

## BUYERS’ CHECKLIST

- ✓ **Access.** Can this solution handle all of the connections that your workforce demands?
- ✓ **Cost.** Will this solution cost you extra in physical infrastructure or save you money in the long term?
- ✓ **Management.** Is it easy to change settings and manage networks and connections?
- ✓ **Security.** Are there built-in security features, or will this solution work with your existing security infrastructure?
- ✓ **Support.** Does this product support desktops, laptops, tablets, smartphones, and other devices your company uses?

## KEY TERMS

### Hardware/application acceleration.

The use of hardware or applications to optimize speed and performance for software. For VPNs, this means giving remote workers the closest possible experience to working in the office.

### Tunnels.

Network connections that remote workers can use to access the VPN. Through these, remote workers can safely access company data, software, and applications on the VPN as long as they are authenticated users.




### User directory support and access control.

The ability to use existing user directories to set up VPNs for individual user groups and the capability to only allow user access to specific data or programs. For instance, set up one VPN for your sales team, which may only need email access, and another for the IT department, which may need access to more in-depth programs.



PRODUCT SPOTLIGHT

# VPN & Remote Connectivity

|             |  |   |   |
|-------------|--|---|---|
| Product     | 4ipnet WHG311 Secure WLAN Controller & EAP110 Access Points  | 4ipnet WHG315 Secure WLAN Controller & EAP300 Access Points   | 4ipnet WHG515 Secure WLAN Controller & EAP300 Access Points   |
|             |   |   |    |
| Description | <p>The combination of 4ipnet's WHG311 Secure WLAN Controller and EAP110 Access Points offers an attractive solution for small venues. WHG311's local, site-to-site, and remote client VPN tunnels can be used to secure the flow of business information for workers on the road or home-based teleworkers, without the need for workers to preinstall any VPN client software. 4ipnet's EAP110 Access Points can be distributed through multiple network locations as if they are under the same internal network via secure tunneling technology.</p> <ul style="list-style-type: none"><li>• Eight 10/100/1000 Base-T RJ-45 LAN ports</li><li>• Recommended max of 150 concurrent users</li><li>• Up to 10 site-to-site VPN links</li><li>• Cloud-based tunneled-AP management of up to 30 4ipnet 802.11n access points</li><li>• Encrypted Gigabit throughput</li><li>• Creative deployment flexibility for both local and remote networks</li></ul> <p><b>Best For:</b> Small-scale deployments such as branch offices and airport terminals.</p> | <p>4ipnet's WHG315 Secure WLAN Controller integrates secure access control; visitor account provisioning; centralized WLAN management; and local, remote client, and site-to-site VPN into one box to provide simplified manageability and instant mobility. VPN tunneling between the WHG315 and 4ipnet's EAP300 access points allows WLAN management to be deployed remotely through the cloud, saving deployment costs and maintenance fees for companies looking for a way to keep costs down on corporate IT infrastructure.</p> <ul style="list-style-type: none"><li>• Eight 10/100/1000 Base-T RJ-45 LAN Ports</li><li>• Recommended max of 250 concurrent users</li><li>• Up to 10 site-to-site VPN links</li><li>• Management of up to 50 4ipnet 802.11n access points via VPN Tunnel</li><li>• High-performance secure wired and wireless network with Gigabit throughput</li><li>• Central user access control and policy and security management</li></ul> <p><b>Best For:</b> Medium-scale WLAN deployments in SMEs and campuses.</p> | <p>4ipnet's WHG515 WLAN Controller, coupled with the company's tunnel-based EAP300 Access Points, offers a central management solution for managing hundreds of remote WLANs for enterprises with a large number of remote offices scattered throughout the nation. One 4ipnet WHG515 can manage up to 250 access points, meaning enterprises, healthcare facilities, and government departments can benefit from sharing their central offices' resources in a more efficient and secure way, regardless of where, when, and what.</p> <ul style="list-style-type: none"><li>• Four 10/100/1000 LAN Ports</li><li>• Recommended max of 800 concurrent users</li><li>• Management of up to 250 access points anywhere within a Layer 2/Layer 3 network</li><li>• Up to 30 site-to-site VPN links</li><li>• High-speed wireless transmission and Gigabit encrypted throughput</li><li>• Central user, policy, security, QoS, and service management</li></ul> <p><b>Best For:</b> Large enterprises, governmental units, health-care facilities, and campuses.</p> |

|             |  |  |  |
|-------------|--|--|--|
| Product     | F5 Networks FirePass SSL VPN   | Fortinet FortiGate-3040B   | Fortinet FortiGate-5140 Chassis-Based System   |
|             |   |   |   |
| Description | <p>F5's FirePass SSL VPN is designed to protect corporate applications and allow access using a Web browser. It allows for users to have safe and secure access to in-office applications regardless of their location. The FirePass SSL VPN can be used with a variety of devices, including desktops, laptops, tablets, and smartphones, as long as they have an active Internet connection. Administrators can also create SSL tunnels and set up client policies to ensure that no unauthorized users have access to internal applications.</p> <ul style="list-style-type: none"><li>• Flexible and adaptable for almost any IT environment</li><li>• Remove stress from servers and free up cycles</li><li>• Run virus checks to make sure your network and apps aren't compromised</li><li>• Available as a physical appliance as well as in a Virtual Edition</li></ul> <p><b>Best For:</b> SMEs that want to give secure remote access to important applications so employees can be productive when they're away from the office.</p> <p><b>Price:</b> \$11,995</p> <p><b>Contact:</b> (206) 272-5555   <a href="http://www.f5.com">www.f5.com</a></p> | <p>The FortiGate-3040B's eight 10GbE ports and up to 40Gbps of firewall throughput make it ideal for securing high-bandwidth networks. Purpose-built by Fortinet, the FortiGate-3040B delivers superior performance through a combination of high port density, consolidated multithreat security features from the FortiOS operating system, and custom hardware, including FortiASIC processors. Expandable onboard storage enables additional features such as local event logging, Web caching, and WAN optimization.</p> <ul style="list-style-type: none"><li>• Eight 10GbE ports and 12 1GbE ports provide best-in-class firewall price/performance</li><li>• Advanced FortiASIC processors maximize throughput and deliver wire-speed firewall performance at 10GbE and 1GbE link speeds</li><li>• Rich feature set, including application visibility and control, a built-in wireless controller, and endpoint policy enforcement capability</li><li>• IPv6-ready platform with strong authentication options for network access and security policy compliance</li><li>• Redundant, hot-swappable power supplies minimize single-point failures</li></ul> <p><b>Best For:</b> Midsized enterprises and data centers securing traditional, virtualized, or cloud-based IT infrastructures.</p> <p><b>Price:</b> Starts at \$39,995</p> <p><b>Contact:</b> (866) 868-3678   <a href="http://www.fortinet.com">www.fortinet.com</a></p> | <p>The FortiGate-5140 chassis-based system from Fortinet can deliver up to 500Gbps of firewall throughput, making it the fastest chassis-based firewall in the industry. This high-performance, low-latency, AdvancedTCA-compliant system enables service providers, very large enterprises, and telecommunications providers to deliver essential network defenses to dynamic, multitenant networks, including cloud-based security-as-a-service and infrastructure-as-a-service environments. The FortiGate-5140 system combines carrier-class hardware components with advanced FortiASIC acceleration and multi-threat security from the FortiOS operating system. Leveraging Fortinet's virtual domain technology, the FortiGate-5140 system can manage up to 3,000 separate virtual domains.</p> <ul style="list-style-type: none"><li>• Up to 500Gbps of firewall throughput and up to 132 million sessions</li><li>• ATCA-compliant architecture delivers carrier-grade performance, reliability, availability, and serviceability</li><li>• Active/active and active/passive high-availability modes for uninterrupted service</li><li>• Design the exact mix of multithreat security, load balancing, and high-speed networking required to support organizational security requirements</li></ul> <p><b>Best For:</b> Large enterprises, service providers, and telecommunications providers with complex high-bandwidth networking demands.</p> <p><b>Price:</b> Starts at \$38,875</p> <p><b>Contact:</b> (866) 868-3678   <a href="http://www.fortinet.com">www.fortinet.com</a></p> |



Processor's Product Spotlight highlights options available in key data center product categories, providing product information side-by-side for easy comparison.

## Black Box EncrypTight WAN Encryption



Going above and beyond the traditional IPsec VPN model, EncrypTight WAN Encryption from Black Box provides airtight encryption for data in motion across the Internet or other IP networks. It requires far less time from IT staff than VPN solutions because there's no need to establish point-to-point VPN tunnels between each pair of remote sites.

- Transparent Layer 2, 3, and 4 encryption
- EncrypTight Management Software allows for centrally managed security
- Helps with compliance with HIPAA, HITECH, PCI, and other industry or government data protection standards

**Best For:** Organizations with multiple remote sites and limited IT staff.

## F5 Networks BIG-IP Edge Gateway



F5's BIG-IP Edge Gateway is designed for companies that want to give remote users the best possible VPN experience and meet the networking demands of multiple devices, including desktops, laptops, tablets, and smartphones. F5's remote connectivity solution not only provides SSL VPN and security, but application acceleration and availability services, as well. The BIG-IP Edge Gateway combines F5's BIG-IP Access Policy Manager, BIG-IP WAN Optimization Manager, and BIG-IP Web-Accelerator into one standalone appliance.

- Endpoint security for protection from malware, data loss, and other threats
- Built-in application acceleration for better overall performance
- Can lower CAPEX and OPEX costs by up to 75%
- Support for up to 8Gbps throughput, 600 logins per second, and 60,000 simultaneous users

**Best For:** Companies that need a versatile remote connectivity solution with VPN, security, and application acceleration.

**Price:** Starts at \$17,995

**Contact:** (206) 272-5555 | [www.f5.com](http://www.f5.com)

## Juniper Networks MAG2600 Junos Pulse Gateway



The MAG2600 Junos Pulse Gateway enables SSL VPN and Enterprise Guest Access capabilities for small and medium-sized enterprises. It comes with Junos Pulse, a simplified, integrated, multiservice network client designed to enable optimized anytime, anywhere access to corporate data from mobile and standard devices. With its quiet operation and table-top form factor, the MAG2600 provides ultimate flexibility in deployment. Additionally, as an integrated inline appliance, the MAG2600 manages role-based network and application access control for guests, partners, and contractors, mitigating threats associated with unauthorized guest user access and their compromised devices.

- Only product to offer SSL VPN capability or Enterprise Guest Access capability in a single appliance
- Smallest form factor gateway (1U high) available for SSL VPN or guest access needs
- Supports up to 100 SSL VPN concurrent users or 200 guest users
- Rack-mountable, or can simply be placed on a desk

**Best For:** SMEs that need an easily deployed, affordable SSL VPN or guest network and application access solution.

## Juniper Networks MAG6611 Junos Pulse Gateway



The MAG6611 Junos Pulse Gateway from Juniper is designed to enable accelerated, secure access SSL VPN or Unified Access Control (for NAC) to meet the most demanding access needs of the largest enterprises. With MAG6611's support for four service modules, the enterprise has flexibility to mix and match the gateway configuration to suit its access requirements. It includes Junos Pulse, a simplified, integrated, multiservice network client to enable optimized anytime, anywhere access to corporate data from mobile and non-mobile devices.

- Only product to offer a single gateway that addresses SSL VPN, Network Access Control, and application acceleration needs
- Modular design supports up to four service modules to meet massive scalability needs
- Easily change between SSL VPN and NAC personalities—for example, SSL VPN today, NAC tomorrow
- Supports up to 40,000 SSL VPN concurrent users or 60,000 concurrent NAC users
- Application acceleration support for up to 4,000 concurrent users

**Best For:** Large, multinational enterprises that need highly scalable SSL VPN, UAC/NAC, and/or application acceleration to address their ever-expanding need for identity-aware accelerated remote or local network and application access.

Do you  
have a  
**NEW**  
**PRODUCT**  
that  
data center/IT  
managers  
would be  
interested  
in  
learning  
about?

Send your press release or related product information to [press@processor.com](mailto:press@processor.com).



SIX QUICK TIPS

# Diagnose Server Performance Problems

Read The Signs To Determine What’s Causing Trouble In Your Data Center

**SERVER LAG FRUSTRATES EVERYONE**—your end users waiting for a Microsoft PowerPoint file to open, your C-level executives who want their email pushed to them instantaneously, and you, the data center manager who must listen to and solve these complaints.

In today’s increasingly virtualized world, server performance problems are more common and problematic than ever before. “In a physical environment, each server had its own SCSI controller, disks, memory, CPU, and so forth,” says Erwin Vollering, virtualization service director at consultancy GlassHouse Technologies ([www.glasshouse.com](http://www.glasshouse.com)). “Now you’re running 10 to 15 servers in a shared environment on your physical host [that] are doing the same thing at the same time, using the same resources, and everything comes crashing down.”

So how do you go about diagnosing these difficulties so that you can solve them and move on? Here are some tips to get you started.

✓ **Make Sure It’s The Server**

Many performance problems that seem server-based oftentimes are caused by issues at the network, database, and storage tiers, says Jesse Rothstein, CEO and founder of ExtraHop ([www.extrahop.com](http://www.extrahop.com)). “Ultimately, you need to look for these problems in a holistic, end-to-end manner, although the distinction can be tricky,” Rothstein says.

“If there is a delay happening, we want to see if the delay is occurring in the server first or if it’s happening out with the network or with the client,” says Dan Klimke, global product marketing manager at Fluke Networks ([www.flukenetworks.com](http://www.flukenetworks.com)). “A lot of time is wasted chasing symptoms.”

Oftentimes multiple servers are linked together to deliver, say, an application to an end user. “You could have a Web-based front-end server that is talking to an application server that’s talking to a database server, and all of these are linked together over a network of some sort,” Klimke says. “So in troubleshooting, a first step is to ensure the problem is with the server, as opposed to being in the network.”

✓ **Fix Your Chatty Apps**

It’s entirely possible that an application is causing your server to lag or hang up. “An application can be excessively ‘chatty,’ meaning that instead of using large frames that encompass using a large amount of data and sending a fewer number of those, they are written to use minimum-sized frames, so they end up having to send back and forth a lot of traffic to get accomplished what larger frame sizes would accomplish much faster and more efficiently,” Klimke says.

For example, a command from an application may have gone into the server that sent the server into no-man’s land. “Look at the actual traffic that went into the server

to find out at what point the packet went in and what command went into the server before it hung up,” Klimke says. “That would necessitate having to look at actual traffic along the wire and being able to decode the command and the frame that went in just before that server hung up.”

✓ **Clean Up Dirty Networks**

Dirty networks—ones that drop, reorder, or fragment packets—can slow down a server’s performance, which can cause decreased server performance and increased server load, Rothstein says.

“Most people don’t realize that the network protocol stacks like the TCP stacks have a fast path and a slow path. The fast path is efficient and optimized for the packets it expects, the in-order delivery of the next packet,” he explains. “But when you have out-of-order delivery or [inadvertently go] down from the L4 layer to the L3 layer, the servers and operating systems will spend a lot more resources reassembling those IP fragments or reordering and reassembling the TCP segments.”


Virtualization can complicate this problem. “Your hypervisor is a scheduler . . . sharing CPU time across all of the different VMs and guest OSes that are running, and things can get delayed when it is switching from one to the other,” Rothstein says. “If the provisioning is wrong, network packets can be delayed to the point where they’re lost by the underlying network stack, and once you reach a tipping point, the performance degradation isn’t just noticeable. It’s catastrophic.”

✓ **Use Your Monitoring Tools**

Whether it’s an automated third-party tool that performs SNMP polling to record your server’s health metrics or a simpler free open-source tool, leverage your monitoring tools, Rothstein says.

Monitoring tools are especially important if you’re using virtualized servers, says Vollering. He says that all three major virtualization providers—VMware, Microsoft, and Citrix—offer good monitoring tools. “They’ll tell you what is stressing your environment, whether it is CPUs, memory, or disk utilization,” he says.

Even though those tools are available and in place, too often companies either don’t know they have them available or don’t know how to use them, Vollering says. Moreover, these tools can flood you with information and alerts. “You could spend the whole day going through graphs or charts,” he says.

So what’s the best way to leverage these tools? “Read through the manuals and configure [the tools] properly for your environment,” Vollering says. “That way, if there’s an alert, you know it needs to be explored, as opposed to being flooded by alerts because it’s still configured with the default thresholds.” 

## Best Tip:

### ✓ *Check Your Server’s Physical Resources*

Once you have pinpointed a performance problem as being server-based, you want to check out the physical resources in the offending server, says Kelly Sather, inside solutions architect at CDW ([www.cdw.com](http://www.cdw.com)). “The best case scenario is as simple as needing to add another processor or more memory,” he says.

“Check to see if your CPU utilization [is being] overwhelmed by processes,” adds Dan Klimke, global product marketing manager at Fluke Networks ([www.flukenetworks.com](http://www.flukenetworks.com)). “We see lots of problems crop up just because disks get full.”

## Most Common-Sense Tip:

### ✓ *Make Sure Servers Are Up To The Task*

Just because your hardware has made the compatibility list for a new or upgraded application doesn’t mean it will run properly, Sather says. “The resources in your server need to be commensurate with the load it’s going to have,” he says. “People moving to Exchange 2010, for example, are coming off older versions of Exchange that ran fine on their dual-processor, quad-core system with 24GB RAM. But because [Exchange 2010] is more resource-intensive, they see after the fact it’s not going to run on the old hardware.”

## BONUS TIPS:

### ✓ *Calibrate and adjust your loads.*

Multiple virtual servers can bring about loads far beyond what physical servers can handle. “Know your limitations. If you do a snapshot at the same time you’re running your monthly financial consolidation numbers, your storage won’t be able to handle all those transactions simultaneously,” says Erwin Vollering, virtualization service director at consultancy GlassHouse Technologies.

### ✓ *Live migrate virtual machines.*

As workloads increase and VMs proliferate, you may find moving a problem-causing VM onto another host or offload “good” VMs onto another host to free up resources to VMs that need them, says Kelly Sather, inside solutions architect at CDW ([www.cdw.com](http://www.cdw.com)). Both VMware’s vMotion and Microsoft’s Hyper-V, among others, let you live-migrate VMs to other hosts without any connectivity to the end user.





CASE STUDY

# Improve Enterprise Storage

Aberdeen's AberSAN Z30 Helps Out The River City Internet Group



**THE ABERSAN Z-SERIES** from Aberdeen is designed to provide SAN enterprise storage environments with a scalable storage system that's as intuitive to use as network-attached storage. The file storage appliances can scale beyond 1PB and can be managed through a single Z-RAID array. River City Internet Group recently selected the AberSAN Z30 to help it keep up with the I/O demands of multiple virtual host machines that are constantly reading and writing production data.

River City Internet Group was working with a hosting company that was looking for a high-performance storage system that's designed to be used with a server

**Aberdeen AberSAN Z30**

A 16-bay, 3U ZFS SAN appliance with Intel® Xeon® 5600/5500 Series processors. Expansion options include seven full-sized PCI-E x8 slots, ZFS cache acceleration for L2ARC and ZIL, up to four JBODs, and HBAs over storage switches.

(800) 500-9526 | [www.aberdeenninc.com](http://www.aberdeenninc.com)

farm. Another goal was that the virtual server farm needed to be extremely flexible and cost-efficient. "We have found the AberSAN Z30 to be exactly what we needed," says Jeff Laird, systems architect for River City Internet Group. "It cost us 60% of what a similar system from another manufacturer would have cost, and it is providing us with performance we have not seen before from a storage system." The Z30 combines Fibre Channel and iSCSI block-level connections with multi-user network sharing to overcome storage and partition-size limitations.

The Missouri-based company needed fast drives in order to handle the potential I/O load predicted in developing a multinode virtual machine farm. The AberSAN Z30 can be built with hardware and Stripe, Mirror, RAID-Z1 (single parity), RAID-Z2 (double parity), and combinations of these. The Z30 can also be built using single, double, or triple parity with hot spares. Multilevel data protection prevents silent data corruptions and supports block- and file-based replication. The AberSAN Z30 is also capable of scaling to work with the growth of disk-based storage. For example, the Z30 uses the ZFS file system, which allows

for unlimited snapshots, making it easy for you to back up stored data more often and, if necessary, restore files quickly. Incremental data backups use less network bandwidth than large daily updates.

The AberSAN also meets the needs of River City Internet Group's virtual machine farm through inherent I/O virtualization. There are hybrid storage pools with SSDs, as well as options for thin provisioning and cloud-ready storage capabilities. Also, unlike traditional solutions, IT staff will enjoy unlimited file system size.

The AberSAN Z30 also comes with the NexentaStor plug-ins. "The Nexenta software is very flexible and has allowed us to allocate and modify settings easily based on changing customer requirements," Laird says. The NexentaStor software provides the high-performance features of the ZFS file system, including tools for in-line deduplication, data mirroring, WAN-optimized IP replication, and high-availability clustering.

The NexentaStor plug-ins are one of the main reasons that River City Internet Group selected Aberdeen. "[Aberdeen] offered a unique method for organizing and partitioning drives via the Nexenta

software, which immediately made sense to us," Laird says.

Cost was also a major factor in the decision making process for the River City Internet Group. "The ROI for this project was unknown going in, and Aberdeen provided the best value for the equipment we needed," Laird says.

The Z30 allows you to scale the hardware by increasing memory available or CPU performance to the number of targets available. With the 3U, 19-inch rack-mount, "We chose to go with 10GbE fiber networking for its tremendous throughput capabilities and chose the fastest drives we could order so that the system could be used with an ever-expanding front-end environment," Laird says.

INTEL, INTEL LOGO, INTEL INSIDE, INTEL INSIDE LOGO, PENTIUM, XEON, AND XEON INSIDE ARE TRADEMARKS OR REGISTERED TRADEMARKS OF INTEL CORPORATION OR ITS SUBSIDIARIES IN THE UNITED STATES AND OTHER COUNTRIES. TRADEMARKS ARE THE PROPERTY OF THEIR RESPECTIVE OWNERS. ALL RIGHTS RESERVED. FOR TERMS AND CONDITIONS, PLEASE SEE WWW.ABERDEENNINC.COM/ABPOLY/ABTERMS.HTM

**Powerful. Intelligent.**

## Network Security for less than what you spend on your morning cup of coffee

Attend a web meeting and we will buy you a cup of coffee

**1(888) 674-9001**

[www.miltonsecurity.com](http://www.miltonsecurity.com)

**MiltonSTART** beta  
Security Threat And Response Team  
Also visit [www.miltonstart.com](http://www.miltonstart.com)

**Edge7200i**  
• up to 5000 users  
• rack mountable

**EdgeSMB**  
• up to 50 users  
• ideal for small businesses



BUYING TIPS:

# Email Security Appliances



**EMAIL SECURITY** is a critical component of any organization, and any appliance tasked with safeguarding email communication needs to be efficient and reliable. Here are the essential elements you need to consider when comparing email security appliances.

**Total cost.** “The acquisition cost is only part of it,” says Damien Ramé, marketing manager at Vircom ([www.vircom.com](http://www.vircom.com)). Service and support options, renewals, updates, and upgrades are also key factors. In addition, he says, IT admins will likely keep the appliance for a while, and if it’s adequate, they’ll stick with the same vendor. “Therefore, the longer-term costs must be evaluated and fit within the allocated budget,” Ramé says.

**Availability, security, and other features.** Before purchasing an email security appliance, Joe Fisher, executive vice president of worldwide marketing at Axway ([www.axway.com](http://www.axway.com)), says you should “think holistically about the problem set” facing your organization. “What is best going to serve the business, both today and in the future?,” he asks. “What you don’t want to do is roll out a solution that solves the problem yet demands that every month you have to reinvest in it.”

Businesses rely on email around the clock. That necessitates 24/7 protection on the part of the security system, Ramé says. “The appliance must have built-in redundancy for the power supply and the hard disks,” with a minimum of RAID 1 data mirroring protection, he says.

“Email security appliances do a lot of disk I/O for storage, reporting, quarantining, and archiving. For larger organizations, this is often a bottleneck,” Ramé says. “Fast hard drives and RAID 5 configurations provide increased disk throughput and redundancy and are ideal for this kind of appliance.”

Fisher cites a need for flexible scaling both up and down the capacity scale as your organization’s needs change over time. After all, he says, “the volume of email isn’t going down.”

Device security is also essential, Fisher says. “Does the solution meet your security profile? Does it have the right certifications from a FIPS standpoint? Is that important? Are they using the right encryption algorithms for securing the data?” An IT data center manager or messaging architect should think about business, security, and architectural needs before choosing a product, he says.


Fisher also recommends choosing an appliance that has the right controls,

governance, and visibility for your organization. “It’s not only an IT operational thing; there are business unit requirements, and perhaps even C-level requirements, that may need to be met.”

**Watch vendor claims.** Vendors often tout high spam filtering rates and low false positive rates. But both can be exaggerated, Ramé says. Instead, the proof of an appliance’s merit is in independent tests from neutral third parties.

Also, when evaluating vendors and their offerings, Ramé says you need to ask these important questions: Does the company excel at service and support?

Can it actually solve the problems you may experience, or will it ask you to reboot the appliance every time there is a glitch? Does it offer overnight replacements for defective units? Are the units maintenance-free, or do they require weekly tuning and fixing?

**Ease of use.** Both the administrator and user interfaces of an email security appliance need to be easy to navigate, Ramé says. They might be accessible via browser, console, or installed app, but they should be clear and simple to understand so they don’t waste busy employees’ time. 

## BUYERS’ CHECKLIST

- ✓ **Reputation.** Is the vendor’s email security technology well-regarded?
- ✓ **Effectiveness.** How much spam and malware does the appliance actually block?
- ✓ **Performance.** Does a system pose a bottleneck under your company’s network demands?
- ✓ **Price.** Beyond the purchase and setup cost, how much will updates and support cost?
- ✓ **Ease of use.** Are both end-user and administrator interfaces straightforward?
- ✓ **Reliability.** Does an appliance have high availability features?

## KEY TERMS

- Appliance.**  
A standalone device for running a particular application, such as email security.
- Hardened.**  
An operating system that has been made more secure, such as what’s found on most security appliances.
- Managed.**  
An appliance that “phones home” to be monitored by its vendor.



# Staco's Total SMB Solutions

Preventive and remedial maintenance services available with **ServiStar®** Field Service Programs



## UNISTAR® C

1, 2, & 3kVA  
Universal  
Single-Phase  
On-Line System

- Economical
- Compact and Lightweight
- Wide Input Voltage Range

## UNISTAR® P

6, 8, & 10kVA  
Rack & Tower  
Parallelable, Single-Phase  
Double-Conversion On-Line UPS

- Up to 98% Efficiency
- Continuous DSP Control
- LCD/LED Mimic Panel

## FIRSTLINE® BMS

Proactive Wireless  
Battery Monitoring System

- Lifecycle management—in real time
- Low cost
- Ease of Installation
- Alarm via email & dry contact
- Graphic LCD touch screen

## FIRSTLINE® PL

208VAC 10-100kVA  
Parallelable, Three-Phase

## FIRSTLINE® P

480VAC 80-125kVA  
Double-Conversion On-Line UPS

- Affordable
- Reliable
- Up to 98% Efficient
- Flexible

Staco FirstLine P, PL & BMS products **NOW SHIPPING!**

from your tailored power solutions provider™

# STACO ENERGY®

## PRODUCTS CO.

# Cover Your Assets!

Prevent Environmental & Power Related System Downtime & Equipment Failure

Keep an eye on remote conditions over a web browser with video surveillance and real-time sensor data



- Temperature
- Humidity
- Airflow
- Light
- Sound
- Door Position
- Water
- Smoke
- Power Failure
- Amperage
- Voltage
- Battery

### WatchDog 100

**Monitor**  
Temperature & Humidity  
4 Analog/Contact Closure Inputs  
4 Optional External Digital Sensors

**Alerts with Escalations**  
Email, Email-to-SMS, SNMP Traps, Voice Call\*  
Automate or control an external device via relay output

**Features**  
Built-in web server accessible securely over IP  
Supports IP Surveillance Cameras  
Built-in PoE (optional)  
\*Optional auto-dialer required


At just \$279, the WatchDog 100 presents a powerful, flexible and economical solution for monitoring, alarming, automation and control for your mission critical application.



Viruses, spyware and network threats get most of the attention, but environmental factors like heat, humidity, water leakage, electricity, smoke and intrusion can be equally devastating to your daily IT operations. The ITWatchDogs line of environmental monitors enable administrators to strategically monitor the data center, server room and network closet environments to protect critical infrastructure and prevent system downtime, hardware damage and data loss.



**ITWatchDogs** sales@itwatchdogs.com • 512.257.1462 • www.itwatchdogs.com



## Cloud computing can create tremendous business value — if you select well.

**Benefits of a properly selected cloud model:**

- ✓ Ease of management
- ✓ Flexible, scalable and cost-efficient
- ✓ 24/7/365 service and support

## Move to the cloud at a speed that makes sense.



**Download mindSHIFT's White Paper: *Seeding the Cloud: How Choosing the Right Model Can Be a Business Rainmaker***



**www.mindSHIFT.com/Processor**




PRODUCT SPOTLIGHT

# Email Security

Product

Axway MailGate 5.0



Description

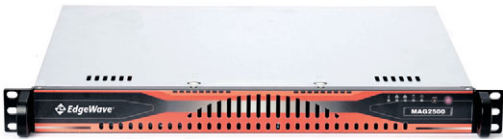
Axway MailGate 5.0 combines email network protection, policy-based content filtering, automated encryption, and more in a single integrated solution. Now including Secure Messaging functionality on a hardened Linux appliance, the latest release of Axway MailGate includes enterprise-class features such as gateway-to-gateway encryption, regulatory compliance lexicons, enhanced digital rights management, and archiving capabilities.

- Inbound threat protection: antivirus and antispam reduce network congestion
- Outbound and inbound message security and DLP (data loss prevention), including encrypted S/MIME email inspection and digital signature validation
- Support for enterprise-grade email security infrastructures and multitenancy, meaning different policies can be applied to different business units and departments with a single installation
- Disaster recovery and high availability via NAS
- Incorporates Axway Secure Messenger, a powerful, policy-based email encryption platform
- IPv6 support extended to secure messaging

**Best For:** Large and medium-sized enterprises.

**Price:** \$8,900

EdgeWave Email Security




Email Security appliances from EdgeWave are managed appliances that protect against internal and external messaging threats. The company's zero-touch solutions include hosted services and appliances that are fully managed by EdgeWave messaging security experts. EdgeWave appliances have optional Vx Technology, which provides automatic failover to the hosted services in case of overwhelming attacks or when needed for load balancing. Vx Technology ensures uninterrupted email security, should unforeseen events occur that affect email servers or power resources. This performance resiliency offers true hybrid messaging security, integrating a local network appliance with a hosted service.

- Protection against spam, viruses, botnets, spyware, phishing schemes, identity theft, and inappropriate content
- Popular among ISPs and MSPs
- Models range from 1,000- to 40,000-user systems
- Scales to meet any company's needs

**Best For:** Small or home offices on up to large enterprises, depending on the model.

Fortinet FortiMail Appliances



Fortinet says that its FortiMail family of appliances delivers proven, powerful messaging security for any size of organization. Purpose-built for the most demanding messaging systems, FortiMail appliances utilize Fortinet's years of experience in protecting networks against spam, malware, and other message-borne threats, the company says. The FortiMail family prevents your messaging system from becoming a threat delivery system—its inbound filtering engine blocks spam and malware before it can clog your network and affect users. Its outbound inspection technology prevents outbound spam or malware (including 3G/4G mobile traffic) from causing other antispam gateways to blacklist your users.


- Filters up to 1.3 million messages per hour
- Three modes of operation: Transparent, Gateway, and Server
- No per-user licensing
- Identity-based encryption of mail
- Wide range of performance, integrated storage, and form factor options
- FortiGuard subscription services deliver dynamic updates to antispam and antivirus functionality

**Best For:** Organizations that need to protect against spam, viruses, and bots; ensure secure delivery of confidential content; and meet regulatory and legal compliance requirements.

**Contact:** (866) 868-3678 | [www.fortinet.com](http://www.fortinet.com)

Product

Proofpoint Enterprise Messaging Security Gateway P650



Description


Proofpoint's Enterprise Messaging Security Gateway appliances can be provisioned with comprehensive inbound/outbound email security as well as DLP. Some notable features include advanced connection management, zero-hour threat protection, enhanced message tracing, and TLS encryption support. The company's DLP works with both structured and unstructured data and includes an integrated policy-based email encryption module. Additionally, the P650 supports Web DLP through policy integration with ICAP-enabled proxies. Proofpoint's SaaS-enabled appliances can also be deployed in unique hybrid configurations that combine on-premises hardware with certain SaaS features.

- Defense-in-depth DLP for compliance with HIPAA, GLBA, and PCI DSS
- "Set it and forget it" administration
- Robust incident management features
- 99.8% or better effectiveness against all types of spam, phishing attacks, malware, and other forms of malicious email

**Best For:** Medium-sized and large enterprises.

**Price:** \$8,500 plus annual user license fees for installed features

Sendmail Sentrion



There are three hard appliances in Sendmail's Sentrion family, which use the powerful Sentrion Message Processing Engine for bidirectional message inspection that provides enterprises with DLP, anti-malware, and compliance services. The devices also support ICAP proxies, Splunk reporting, and protocols including HTTP Webmail. Sendmail also offers similar functionality in virtual appliances, hybrid implementations, and even blade servers.

- Supports additional applications for incident remediation, reputation servicing, policy-based encryption, and more
- Scalable; supports clustering
- Can manage automatically generated email, including invoices, CRM, and ERP messages
- Supports enforcement of complex policies

**Best For:** Large enterprises.

Software Security Solutions Cloud-Based Email Security Services



Software Security Solutions' Cloud-Based Email Security Services offer enterprises hosted protection against a variety of threats, including viruses and spam. The company's services run every email through five different antivirus engines, plus server and endpoint protection, for seven layers of protection. The services can also be used with optional business continuity, email archiving, and email encryption modules for more complete protection.

- Seven layers of email security with five antivirus engines, server protection, and endpoint protection
- Optional business continuity module provides secure access to email for up to 28 days in the event of email server failure
- Enterprises can securely capture, store, and index incoming and outgoing email with the optional archiving module
- Optional email encryption helps meet legal, compliance, and regulatory standards

**Best For:** Small companies that lack the budget or resources to manage in-house email security appliances.

**Contact:** (303) 232-9070  
[www.softwaresecuritysolutions.com](http://www.softwaresecuritysolutions.com)



Processor's Product Spotlight highlights options available in key data center product categories, providing product information side-by-side for easy comparison.

## Mirapoint Message Server



Message Server from Mirapoint is a reliable, easy-to-use email server that's built on an open-standards platform and includes collaboration features and a multilayer security approach, which includes multiple antivirus and antispam engines, sender-based connection controls, and sender IP reputation validation. Message Server is available in a number of iterations, from the easy-to-use M700 to the powerful M7700, to ensure secure messaging for enterprises of all sizes.

- Integrates with Mirapoint's RazorGate and RazorSafe appliances for email security and management
- Lowers complexity, reduces the administrative load, and easily scales to meet growing needs
- Offers all-in-one messaging, collaboration, and security

**Best For:** Enterprises needing a secure messaging solution capable of handling millions of messages.

## Mirapoint RazorGate Appliances



Mirapoint's RazorGate appliances are powerful, scalable email security gateways designed to protect enterprises of all sizes from email-borne threats such as spam and viruses. RazorGate appliances combine connection-level controls, Rapid Antispam technology, virus protection, and end-user spam controls for intuitive protection against malicious content, all in one easy-to-install and easy-to-manage hardware appliance.

- Connection-level controls through MailHurdle, which blocks up to 80% of threats at the network edge, and Sender Policy Framework, which blocks emails from forged addresses
- Reputation services flag suspicious IP addresses
- Monitoring and effectiveness reporting via a configurable dashboard
- Seamlessly routes email to Mirapoint's Message Server or any other email server and works with MessageSafe for archival
- Simplicity of design and minimal administration reduces installation time and resource demands

**Best For:** Enterprises that need maximum email security with low TCO and minimum resource requirements.

## SonicWALL NSA E8510



The flagship of the SonicWALL NSA lineup, the NSA E8510 combines sophisticated software with a high-performance, 16-core hardware design to provide multigigabit scanning performance. The appliance features the company's Reassembly-Free Deep Packet Inspection technology, which uses a scalable application inspection engine to analyze content of any size in real time, providing protection against outside and inside threats at the application and network layers. The NSA E8510 can even decrypt and scan both inbound and outbound HTTPS traffic on the fly without impacting performance, SonicWALL says.

- 10 Gigabit Ethernet support
- 2.2Gbps of full deep packet inspection throughput
- Clean VPN feature safeguards the integrity of IPsec and SSL VPN connections

**Best For:** Enterprise deployments in data centers, campus networks, and distributed environments.

**Price:** \$39,995

## SonicWALL SuperMassive E10800



The SuperMassive E10800 from SonicWALL is built to inspect hundreds of thousands of connections simultaneously across all ports. Among its standard and optional features are intuitive AppFlow Visualization tools, which let the E10800 apply app-level policies to productive or unproductive application traffic. It also features active and passive hardware failover protection with state sync. Additionally, SonicWALL's Reassembly-Free Deep Packet Inspection provides application intelligence, SSL traffic inspection, anti-malware, and more.

- 40Gbps of deep packet inspection throughput
- 96 processing cores
- Six 10Gbps SFP+ and 16 1Gbps SFP Ethernet ports

**Best For:** Large enterprises, government agencies, higher education facilities, and service providers.

**Price:** \$198,000

Do you  
have a  
**NEW**  
**PRODUCT**  
that data  
center/IT  
managers  
would be  
interested  
in learning  
about?

Send your press release or related product information to [press@processor.com](mailto:press@processor.com).



# Plan A Network Cabling Project

Space, Money & Other Considerations

**WHETHER DEALING WITH** new or pre-existing space, network cabling projects can be daunting due to all the factors that must be taken into consideration. Further, as with most major projects, a successful network cabling venture doesn't just account for current requirements, parameters, obstacles, and resources; it accounts for the future, as well. Failing to do so can result in delays, unforeseen costs, migration obstacles, and other problems. Keeping the following tips in mind when planning a network cabling project can prevent headaches later.

✓ *Plan Well*

Although seemingly obvious, having a clearly defined scope for your project is a must in order to properly allocate resources. "As with most projects, your first step should be to sit down and make a plan," says Laura Viars, senior account manager at Rackmount Solutions ([www.rackmountsolutions.net](http://www.rackmountsolutions.net)). "Assess your physical infrastructure (your network's topology) as well as the logical infrastructure, which will include your switching and speed requirements. . . . Consider future growth and potential physical obstacles within the building. Once you have a firm grasp on the type of layout you'll require, you'll be better prepared to map it out and implement it."

Ken Koty, sales engineer at PDU Cables ([www.pducables.com](http://www.pducables.com)), adds that changes made later on can cause delays, and Viars agrees. "Poorly thought-out cable installations aren't difficult to spot; you might see overly lengthy patch cords, improperly sized cable management, and discarded cable ties littering the surrounding areas," she says. "Maintaining a setup with ineffective cabling is beyond inconvenient and can cause unnecessary delay in the event that you ever need to update or troubleshoot the network." By planning for current requirements and potential expansion, she says, "you can ensure that you'll have sufficient room for growth and the means to quickly identify and remedy any issues."

Conversely, Jason Hill, Midwest regional sales manager for network cabling solutions at Hellermann Tyton ([www.hellermann-tyton.us](http://www.hellermann-tyton.us)), says taking the data center's lifespan into consideration when designing cable infrastructure is crucial. "Designing a data center that has the ability to migrate up to the 100GbE mark is exciting, but could be excessive," he says. "Many dollars are spent with good intentions but without knowing how long the space will be in production."

Overall, Andrew Schmeltzer, global cabling product manager for Black Box ([www.blackbox.com](http://www.blackbox.com)), says you should support cabling end-to-end, from the data center to the desktop. "This includes trays in the data center and the appropriate cable support apparatus in the ceiling," he says. "That can include cable hangers or other cable support systems." Also important is having proper horizontal and vertical cable management in cabinets and racks, he says. A design aspect that gets neglected in most deployments, Hill says, is how cabling on the back of patch panels will be handled. "A good rule of thumb is to always put a rear manager to keep the cabling in place," Hill says. "This also is a good place to put any extra slack. Placing 2 to 3 feet of extra cabling

provides the flexibility to move the cabling in the future."

✓ *Look Ahead*

Where future needs are concerned, keeping migration paths in the forefront of design plans is important, but so is choosing a cable manufacturer/provider that can adapt to changes. "The path from 10GbE to 40GbE to 100GbE is straightforward and should be considered," Hill says. "Many aspects of the 100GbE system are adaptable, so one should engage a manufacturer that can bring the expertise of the changes." Gina Dickson, Black Box global infrastructure product manager, advises to have rack space set aside for future projects. "Choose wider cabinets to easily accommodate cable management and more cables in the future," she advises.

Schmeltzer advises to "plan for the most robust cabling system you can that's within your budget" and factor in enough bandwidth for current and future applications. "I can almost guarantee that whatever bandwidth you think you need, you'll need far more," he says. Ultimately, the cabling infrastructure you're installing will need to support company operations for 10 to 15 years minimum, he says. "Think back: CAT 5e was only ratified in 2001. Gigabit Ethernet was an emerging technology. Now, we're talking 40 to 100 Gigabit Ethernet," Schmeltzer says. "So, give yourself plenty of room to grow. At the very minimum, CAT 6 should be installed for horizontal copper cabling and OM3 fiber for backbones."

✓ *Consider Hiring Outside Help To Save Time & Money*

It might seem counterintuitive, but contracting for various jobs can save resources long-term. For example, Hill says, hiring a cable supplier with infrastructure design experience can alleviate the learning curve for IT and enable deployments to meet or exceed a time table. Along those lines, Koty advises to "contract out much of your structured cabling to prevent having in-house skilled workers performing this task. You can schedule several jobs at the same time and save overhead in the long run," he says.

For new construction and installation projects, Schmeltzer advises to thoroughly coordinate the timing of those who will install cable and those handling other construction tasks. If possible, schedule cable technicians to be onsite prior to those installing ceiling tiles, drywall, office cubes, and other equipment. "It takes a lot more time to remove tiles and install cable after the ceiling is up," he says.

✓ *Don't Overlook The Obvious*

One cabling detail that often gets overlooked, Hill says, is the functionality of the cabling system. When designing a build out of the cabling infrastructure, "address issues with active equipment," he says. "For example, a SAN director has a vital role within the data center. When designing the cabling infrastructure, one can do port emulation for the blades. Obviously, one can install the fiber cords very easily in a patch panel environment vs. the GBics on the blade. Another good example would be handling the cabling requirements for the storage arrays."

## Most Common-Sense Tip:

✓ *Factor In Existing Equipment*

Make certain existing equipment is compatible with the new cabling you're installing, says Andrew Schmeltzer, global cabling product manager at Black Box ([www.blackbox.com](http://www.blackbox.com)). "You can't mix CAT 5e and CAT 6 cable, and any existing cable infrastructure should be thoroughly tested and recertified," he says. Relatedly, Ken Koty, sales engineer at PDU Cables ([www.pducables.com](http://www.pducables.com)), says that whenever equipment is down for maintenance, "seize the opportunity to redress cabling."

## Smartest Tip:

✓ *Take Preventive Steps Against Signal Loss*

According to Laura Viars, senior account manager at Rackmount Solutions ([www.rackmountsolutions.net](http://www.rackmountsolutions.net)), signal loss tops her list of factors that can cause a network to run slow. To combat signal loss, Viars recommends keeping patch panels to a minimum, as they are responsible for an estimated 0.5dB of signal loss per panel. She also advises avoiding excessively long runs of cable. "Keeping these factors in check will help your network to operate at maximum efficiency," she says.


## BONUS TIPS:

✓ *Emphasize organization.*

Where maintenance of network cables are concerned, don't overlook cable management, Rackmount Solutions' Viars says. "Try to avoid permanent solutions, as networks are always expanding," she says. "For example, using hook-and-loop wraps rather than cable ties provides cost-effective, accessible, and reusable cable management. Properly sizing your patch cords can also help manage cable messes; avoid excessive lengths but make sure not to go too short, either. You don't want your cables to be taut. If extra-long patch cords are unavoidable, invest in some horizontal managers to keep cables tidy, and remember, always label when applicable."

✓ *Address heating and cooling.*

Where heating and cooling efficiency are concerned, Ken Koty, sales engineer at PDU Cables ([www.pducables.com](http://www.pducables.com)), says that using overhead racking for network and storage cables will prevent air dams forming under the floor. Also, keep cabling out of the way of exhaust fans in cabinets, he says.

Data center real estate and equipment rooms are areas often overlooked when planning network infrastructure, Schmeltzer says. "I've seen new installations and network expansions where space and distances were completely underestimated," he says. "Remote closets with backbone connections weren't laid out, and suddenly, closets need to be built to accommodate network distance limitations." 



# THE WORLD'S MOST RELIABLE DATA CENTER RACK PDUS. ONLY FROM SERVER TECH.

Would you trust your data center power management to anyone but the inventors of the intelligent PDU? Since 1984, Server Technology experts have produced the highest quality rackmount power distribution and monitoring solutions. Built for reliability and performance. All designed to help you manage power capacity, reduce downtime and improve energy efficiency.

## SERVER TECH QUALITY POWER ARCHITECTURE

It's the engineering foundation that makes our PDUs the industry standard. For quality and reliability, designed and configured your way, delivered fast. Contact a Server Tech power expert today.



### Server Technology

Quality Rack Power Solutions

[www.servertech.com](http://www.servertech.com)  
1-800-835-1515

©2012, Server Technology, Inc

# PROCESSOR

## Subscribe Today!

Call (800) 334-7458

## Subscribe Online!

Go to [www.processor.com](http://www.processor.com)

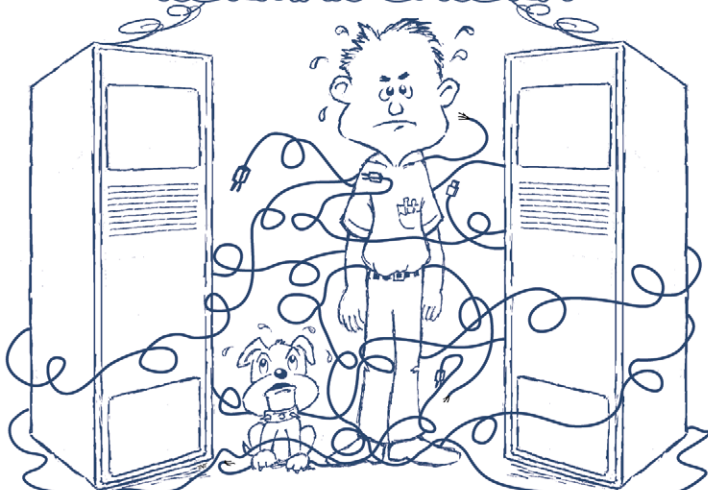
*Processor* is the industry's most comprehensive source for:

- ▶ Snapshots of new data center and IT hardware and software
- ▶ Rundowns of major industry news
- ▶ Information on manufacturers and resellers
- ▶ Tips, strategies, and advice from experts in the field



Data Center | Power | Cooling | Storage | Wireless | IT | Networking | Racks | Servers | Security | Flooring

### THE ADVENTURES OF NORMAN & NORA




NETWORK ISSUES HAVE YOU TIED UP?

## NEW/REFURBISHED/LEGACY

### SERVICES, WORKSTATIONS, STORAGE AND NETWORKING

Hewlett Packard  
Sun/Oracle  
IBM  
SonicWALL  
Compaq/DEC  
Dell  
Cisco  
Juniper  
& Other Tier One Network Products



**832.467.0000**  
[WWW.NORDSTARGROUP.COM](http://WWW.NORDSTARGROUP.COM) [INFO@NORDSTARGROUP.COM](mailto:INFO@NORDSTARGROUP.COM)



# A Look At SATA Express

The Newest Storage Spec From SATA-IO Combines Features Of SATA & PCI Express To Meet Increasing Storage Throughput Demands

**SATA IS THE DOMINANT STANDARD** used to connect hard drives and SSDs (solid-state drives) to PCs, but the industry organization tasked with supporting the standard is looking to boost its speeds beyond the current peak 6Gbps. The SATA-IO (Serial ATA International Organization) just announced that it is currently developing a new storage-based standard that will combine the SATA software infrastructure with PCI Express technology, which is more commonly associated with peripherals such as discrete graphics and sound cards and other internal PC expansion cards. The new standard, predictably dubbed SATA Express, will achieve device interface speeds up to 8Gbps and 16Gbps.

### Something Old & Something New

According to a SATA-IO spokesperson, “SATA Express utilizes readily available, fast, and scalable PCI Express connectivity while preserving established SATA software and legacy applications. By doing so, it enables manufacturers to develop cost-effective, high-performance storage solutions at speeds greater than 6Gbps that will also coexist with current SATA products already on the market.”

As the SATA-IO readily admits, backward compatibility is important for any new standard that hopes to gain traction in the computing sector, which is just

one more reason the marriage between SATA and PCI-E makes so much sense.

### Manufacturer & Consumer Considerations

Although 6Gbps SATA drives have hardly saturated the market, users and organizations who require blazing fast storage and high-performance systems will welcome the new standard with open arms. Device manufacturers also appreciate the advancement that SATA Express represents. According to the SATA-IO, “SATA Express will be especially beneficial for SSD and hybrid drive manufacturers in the client storage space. SSDs are already pushing the limits of the current SATA data rate (6Gbps).”

And those device manufacturers agree that new specifications will be potentially ground-breaking for the enterprise market. According to Daryl Lang, vice president of product management at OCZ (www.oczenterprise.com), SATA Express is among the future interfaces that the firm is currently reviewing; however, he cautions that, “At this point, it would be premature to comment on which of these technologies will be the most widely adopted in the enterprise market.”

Lang also points out that SATA Express isn’t a sure thing and that it won’t be until it makes its way into actual products. “For client platform adoption, this is clearly driven by chipset support,” Lang says. “For enterprise features, functionality and OEM support will be critical.” And the key, according to Lang, is how low the SATA-IO can keep the cost of the new interface, because “cost is going to be king.” But the success of current SATA specs suggests that if any organization is capable of garnering OEM and chipset support, keeping prices in check, and maintaining a flexible and capable format, it’s the SATA-IO.

### Express Lane

Although Lang says that SATA Express is somewhat late to the next-generation

interface game, the SATA-IO expects the currently-in-development standard to see the light of day very soon; in fact, the group predicts the spec will be completed by the end of the year. As for when products will arrive on store shelves, the SATA-IO says it will take time for manufacturers to develop offerings: “While we cannot speak to individual manufacturer product plans, we would typically expect products to hit the market within a year of the spec being released.”

The SATA-IO is quick to point out the somewhat limited scope of the new standard’s appeal. “SATA Express is designed for devices like client SSDs and hybrid drives that currently require performance higher than 6Gbps,” the organization says. “Currently, those devices make up a small but growing segment of the overall storage market.” For applications that are capable of saturating the existing SATA III interface, SATA Express will be a cost-effective way to squeeze additional performance from the hardware. Regarding existing SATA II/III (3Gbps/6Gbps) devices, the group’s spokesperson says, “SATA-IO fully expects SATA Express devices to coexist with existing SATA and PCI-E devices for the foreseeable future.”


### On The Horizon

SATA Express appears to have a bright future in the near term, but the SATA-IO has big plans that will take

### Key Points

- The Serial ATA International Organization recently announced that it is developing a new storage-based standard that will combine the SATA software infrastructure with PCI Express technology.
- SATA Express will achieve device interface speeds up to 8Gbps and 16Gbps.
- SATA Express will be most beneficial for SSD and hybrid drive manufacturers in the client storage space.

some time to fully come to fruition. “The SATA Express specification is currently utilizing PCI Express Gen 3, which allows devices to achieve speeds of 8Gbps per lane,” the group says. “Early SATA Express devices will be able to support up to two lanes of PCI Express. SATA-IO expects the specification can grow to support faster generations of PCI Express as they become available.”

Although current application demands and modern workloads aren’t yet ripe for broad acceptance of the new standard, storage is becoming more and more of a premium for the enterprise and consumers alike. There’s no telling what tomorrow holds, but you can bet fast storage is going to be imperative in the closer-than-you-think future. 

Backward compatibility is important for any new standard that hopes to gain traction in the computing sector, which is one reason the marriage between SATA and PCI-E makes so much sense.

## SATA Roadmap

When you look at the evolution of the SATA standard, which started in 2003, SATA Express appears to be the next evolution of speed for PC-based storage. Here’s a list of the peak speeds for the various SATA revisions:

- SATA Revision 1.0 peak speed: 1.5Gbps
- SATA Revision 2.0 peak speed: 3Gbps
- SATA Revision 3.0 peak speed: 6Gbps
- SATA Express peak speed: 8Gbps to 16Gbps

### ■ Mozilla & Google Strike Lucrative Search Deal

Firefox maker Mozilla and search giant Google announced that they have signed a “significant and mutually beneficial revenue agreement” that will extend the companies’ current search partnership for at least another three years. As per the deal, Google would continue to be the default search engine for Mozilla’s Web browser, which holds about a quarter of the Web browser market. The two companies did not release terms of the contract, citing confidentiality requirements; for reference, in 2010, the

agreement was responsible for \$103 million—about 84%—of Mozilla’s \$123 million in revenue.

### ■ Database & Systems Management Markets See Growth In 2011

Despite lingering worldwide economic uncertainty, the database and systems management markets saw significant growth in 2011, according to IDC. Specifically, the global systems management market grew 9.2% from 2010 to reach

\$15.4 billion at the end of 2011, and the global database and data integration software market ended the year with 11.6% growth, climbing to \$35.5 billion. Three of the six markets IDC includes in the systems management arena—change and configuration management, workload scheduling and automation, and performance management—saw revenues of more than \$1 billion in the first half of 2011 alone;

top-performing systems management vendors for the year were IBM, BMC, and HP. In the database management arena, the database development and management tools market saw the best improvement, growing more than 300% year over year, according to IDC.

### ■ Government On Track To Surpass Original Data Center Closing Goals

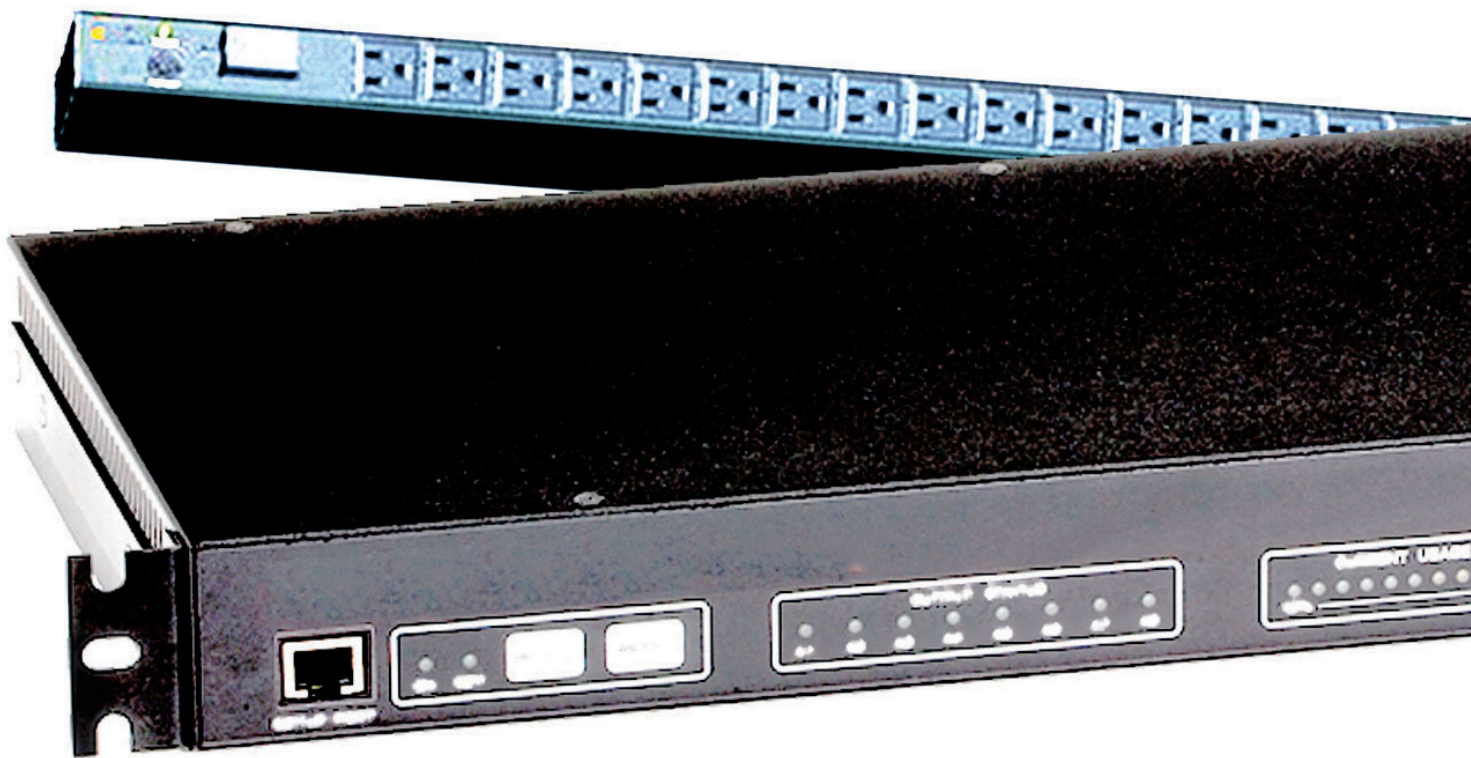
The U.S. government announced that it has plans to close an additional 280 data centers by the end of 2015, surpassing its original goal of 800 outlined in the Federal Data Center

Consolidation Plan, to shutter a total of 1,080 centers. According to federal CIO Steven VanRoekel, government agencies are ahead of schedule in shutting down centers, so rather than finishing early or slowing down, the government decided to push its goals further to make more progress. Part of that progress is broadening its scope; the initiative will now focus on smaller server rooms in addition to its original target of data centers with 500 square feet of space or more. All told, VanRoekel says the government aims to close about 40% of its data centers.



BUYING TIPS:

UPSes



ULTIMATELY, the primary question IT should ask when buying UPSes is what level of protection is needed, says Brett Femrite, director of business development at Rackmount Solutions ([www.rackmountsolutions.net](http://www.rackmountsolutions.net)). “A basic surge protector/suppressor will go a long way to protect your equipment from power spikes and surges, but in the case of power outages, you need to look at a UPS,” he says. To that end, consider the following buying tips.

Top features to consider.

Beyond a high efficiency rating (95% or greater), James Hall, marketing manager at Staco Energy Products ([www.stacoenergy.com](http://www.stacoenergy.com)), says UPS systems should offer a high input power factor (greater than 99%), low input distortion (3% or less), easy installation and accessibility, and an external maintenance bypass switch. Other notable features include high-performance filtering to protect upstream power sources and dual inputs for the main and secondary emergency standby power. Hall advises to select a UPS that has sufficient capacity to handle the IT loads, adding that UPSes exceeding their capacities is one of the highest causes of data center downtime.

Capacity-wise, Femrite advises to purchase a unit that exceeds your total power requirement by 20 to 30%. “This not only ensures capacity coverage but will also allow some room for growth if/when you add additional pieces of equipment,” he says. Where runtime is concerned, Femrite says, “It can be a great cost savings down the road if you factor in future expansion and buy a UPS that offers the ability to upgrade or add additional batteries if/when needed.”

**UPS types.** The three primary UPS categories include standby, line-interactive, and online models, Femrite says, with different iterations existing within each category. Standby systems run power through surge suppression to the equipment; if there’s a power outage, the UPS switches to battery backup power, reverting back to AC power when

power returns. Line-interactive systems have built-in line-sensing abilities to regulate high or low voltage levels. An inverter switches on if there’s a power loss, and the system switches to battery power. Online systems provide the highest protection level, Femrite says, as the inverter is online and operates continually to eliminate incoming surges and low

and high voltage issues while delivering clean power to equipment.

**Data center-grade features.** For data center use, Hall says three-phase online double conversion (converts AC power to DC and then back to AC) systems offer the greatest value while also providing conditioned power to IT loads. “These UPS systems totally isolate the load from the primary AC line,” he says. “Noise, sags, and swells never reach the load.” Overall, Hall says obtaining the lowest TCO should be a primary objective. “This includes battery and other auxiliary hardware,” he says. He advises to determine what the cost to acquire, operate, and maintain equipment will be over the equipment’s lifetime. Additionally, key factors include high sustainability, space efficiency, ease of installation, integration with existing systems, scalability, and high reliability.

**Size matters.** In terms of data center-grade UPSes, Femrite cautions one size doesn’t fit all. “It’s more about design and configuration than type,” he says. Budget, kW/MW capacity, availability requirements, and risk tolerance are other factors, as is recognizing that as the configuration gets higher on the availability/dependability scale, the associated costs also increase. “Redundancy, system efficiency, distributed architecture, maintenance, and fault tolerance (eliminating single points of failure) are all key considerations when evaluating data center-grade UPS solutions,” Femrite says. Hall adds that SMEs should take transient loads into account when determining ideal UPS size.

**Batteries.** When factoring in batteries, Femrite says, “the solution you select should be able to notify you of any issues with battery performance or maintenance needs.” Hall points out that battery life will degrade with age, even if they don’t encounter lots of discharge cycles. Thus, if your minimum runtime requirements are critical, “the battery should be selected to provide some cushion so that after several years, minimum runtimes can still be achieved,” Hall says. ■

BUYERS’ CHECKLIST

- ✓ What type of UPS system do you need?
- ✓ Is the UPS sized to properly handle the loads required?
- ✓ Are the necessary monitoring and management tools provided?
- ✓ Does the UPS offer sufficient runtime and capacity?
- ✓ Is the UPS backed by insurance or a guarantee?

KEY TERMS

Capacity:

The maximum amount of power a UPS can handle.

IGBT and DSP:

Short for insulate-gate bipolar transistors and digital signal processors, respectively, these components provide for true online double conversion in UPS systems.

Runtime:

The length of time a UPS will continue providing backup power in event of a power outage.




PRODUCT SPOTLIGHT

# UPSes

Product

Active Power CleanSource UPS




Description

The CleanSource UPS from Active Power is a highly reliable, energy-efficient, battery-free UPS system that uses integrated flywheel technology. CleanSource UPS is designed to protect mission-critical data center operations from both short power disturbances to complete outages. With an energy efficiency of up to 98% and more than 100 million hours of runtime in the field to date, CleanSource creates a predictable, continuous power system designed to ride through power outages to keep critical operations up and running.

- Rugged on-line and fault-tolerant UPS
- Smallest available footprint
- Modular, scalable, and redundant architecture
- 20-year design life
- Wide operating temperature range
- Low service and maintenance requirements
- No hazardous waste material

**Best For:** Mission-critical data centers that need highly reliable power conditioning and protection.

CyberPower Systems PFC Sinewave UPS Systems



The CyberPower CP1500PFCLCD PFC Sinewave UPS System with pure sine wave output and multifunction LCD safeguards computer systems, servers, and networking hardware that use conventional and Active PFC (Power Factor Correction) power supplies. Its AVR (automatic voltage regulation) topology delivers clean, consistent AC power, protecting connected equipment and preventing costly business interruptions. Its patented GreenPower UPS™ advanced circuitry reduces UPS energy costs by up to 75% compared to competitive models. The PFC Sinewave UPS Systems solve the critical compatibility issues of non-sine wave UPS products working with computing systems using Active PFC power supplies (ENERGY STAR 5.0).

- 1,500VA/900W pure sine wave UPS
- Line-interactive topology
- AVR & GreenPower UPS

**Best For:** Midrange to high-end computer systems, servers, and networking hardware that use conventional and Active PFC (Power Factor Correction) power supplies.

**Price:** \$259

**Contact:** (877) 297-6937 | [www.cyberpowersystems.com](http://www.cyberpowersystems.com)

CyberPower Systems Smart App Sinewave PR750LCD UPS with Extendable LCD Control Panel



The CyberPower Smart App Sinewave PR750LCD mini-tower UPS with LCD Control Panel and pure sine wave output is Active PFC compatible for safeguarding mission-critical servers, telecom equipment, VoIP, and internetworking hardware that require seamless pure sine wave power. Its full AVR (automatic voltage regulation) boost/buck topology delivers consistent and clean AC power, protecting connected equipment and preventing costly business interruptions. The LCD Control Panel provides 41 different settings to check status and customize the operating settings for the PR750LCD, plus it can be removed and mounted separately from the UPS for ease of use regardless of where the UPS is installed.

- 750 VA/525W pure sine wave UPS
- Line-interactive topology
- Full AVR Buck/Boost & GreenPower
- Only UPS with extendable LCD panel


**Best For:** Mission-critical servers, telecom equipment, VoIP, and internetworking hardware.

**Price:** \$299

**Contact:** (877) 297-6937 | [www.cyberpowersystems.com](http://www.cyberpowersystems.com)

Product

GE SG Series 10-750kVA UPS




Description

GE's SG Series 10-750kVA UPS is a three-phase unit that offers maximum output performance, efficiency, and functionality with a small footprint. The UPS operates in double-conversion mode; features true continuous online VFI (voltage and frequency independent) operation with integral full-load static switch and internal maintenance bypass; and includes eBoost, which cuts energy use without sacrificing reliability.

- Includes full 24/7 service team support for preventive and corrective services, training, and application expertise
- 99% operating efficiency
- Fused surge protection
- Front access makes maintenance and service simpler
- Superior battery management enhances battery lifetime
- Integrated intelligent energy management
- Redundant parallel architecture

**Best For:** Maximum protection for mission-critical processes.

Rackmount Solutions Minuteman Endeavor UPS Battery Backup



Rackmount Solutions' Minuteman Endeavor series of UPS battery backup products delivers an online uninterruptible power supply in a form factor that can be rack-mounted, placed on the floor as a tower, or installed in a cabinet. With a power factor of 0.8 watts and available with capacities up to 3kVA, the Minuteman Endeavor series features hot-swappable batteries, rapid battery recharging, and extended runtime using external battery packs, and it's also RoHS-compliant. Outlet receptacle control for noncritical load shedding is included. The Endeavor series also includes Minuteman SentryPlus monitoring and control software and a front panel display with status indications.

- Simultaneous RS-232, USB, and SNMP communications
- Three-year warranty with up to \$200,000 equipment damage insurance
- Manual and automatic testing
- Harmonic distortion control
- Dedicated emergency power off port

**Best For:** Any situation where form factor flexibility is needed.

**Price:** Starts at \$546.75

**Contact:** (866) 207-6631 | [www.rackmountsolutions.net](http://www.rackmountsolutions.net)

Rackmount Solutions Minuteman EnterprisePlus UPS Battery Backup



The Minuteman EnterprisePlus UPS Battery Backup is a family of line-interactive UPSes from Rackmount Solutions featuring a flexible form factor that can be mounted on the floor, in a rack, or in a cabinet. Other features include a 0.8 power factor; load shedding to extend the time it can support critical applications by rationing power from inactive devices; and simultaneous DB-9, USB, and SNMP communications.

- Independent battery bypass provides voltage regulation even when batteries are weak or dead
- Independent battery pack chargers
- Virtually unlimited battery pack support
- Minuteman SentryPlus monitoring and control software
- Front panel display
- Dedicated emergency power-off port

**Best For:** Any situation where form factor flexibility is needed.

**Price:** Starts at \$390.15

**Contact:** (866) 207-6631 | [www.rackmountsolutions.net](http://www.rackmountsolutions.net)



Processor's Product Spotlight highlights options available in key data center product categories, providing product information side-by-side for easy comparison.

## GE GT Series



The transformerless GT Series (5 to 10kVA) offers a true online VFI (voltage and frequency independent), double-conversion range and comes in a tower and rack convertible design. The GT Series can be expanded to create up to 30kVA in a parallel system. Batteries are hot-swappable, and extended runtimes are available with matching battery cabinets. The GT Series can also handle cold starts and programmable load shutdowns with a remote power switch for separate sites. Multiple PDU options and backfeed protection are available.

- Single-phase output voltages of 120/208V
- 80 to 138V input voltage window
- Frequency conversion 60/50Hz
- SNMP can be added for network communication
- Prevents deep battery discharge at low loads

**Best For:** Data centers that need a flexible UPS option.

## GE LP33 Series



The Digital Energy LP33 Series UPS (10 to 100kVA) offers various power protection features for mission-critical applications, including GE's Redundant Parallel Architecture technology that parallels up to four units. Operating in double-conversion mode, the LP33 Series offers true online VFI (voltage and frequency independent) operation and high-frequency Pulse Width Modulation IGBT digital control techniques for a quicker transient response and lower output distortion. Additionally, a transformerless design makes the UPS compact, lightweight, and quiet.

- Greater than 0.98 input power factor and less than 8% input THD distortion
- Up to 98% operating efficiency in ECO mode
- 54 to 66Hz input frequency and 208V
- LAN, modem, SNMP, RS-232, Modbus RTU, programmable alarm contacts, and TCP/IP connections provide for remote monitoring and management
- SBM (Superior Battery Management) technology helps to preserve battery life

**Best For:** Companies searching for a transformerless and energy-efficient three-phase solution.

Do you have a

# NEW PRODUCT

that data center/IT managers would be interested in learning about?

Send your press release or related product information to [press@processor.com](mailto:press@processor.com).

## Staco Energy Products FirstLine P 65-125kVA 480VAC UPS



With the addition of the FirstLine P 65kVA 480VAC UPS to Staco Energy Products' 80-125kVA UPS lineup, the company now offers three-phase UPSes for 65-125kVA applications. Up to 98% efficient, the devices use IGBT (insulated-gate bipolar transistor) and DSP (digital signal processor) control to produce true online double conversion with up to eight units in parallel for expandability and redundancy. FirstLine P boasts high efficiency and an impressive power factor, which translate into lower utility costs and a greener footprint. The units protect upstream power supply sources from harmonics and reactive power generated by the load.

- Dual Bus and Dynamic Dual Bus System configurations
- Hot-swappable
- Front, top, or bottom access for placing units against a wall
- Two-year onsite warranty
- Nationwide Service Program

**Best For:** Computer room and data center applications where affordability, efficiency, reliability, and flexibility are essential.

**Contact:** (866) 261-1191 | [www.stacoenergy.com](http://www.stacoenergy.com)

## Staco Energy Products FirstLine PL 10-100kVA 208VAC UPS



Staco Energy Products FirstLine PL UPS is a parallelable three-phase UPS meant for 10-100kVA applications. Up to four FirstLine PL units can be run in parallel, providing redundancy with no additional hardware. The units have efficiencies of up to 95% and feature a compact transformerless design that allows for internal batteries up to 30kVA. IGBT and digital signal processor control provides true online, double-conversion technology, while a user-friendly display boasts alarms and LED indicators for bypass, main line, battery powering the load, load on bypass, and normal output.

- Dynamic Dual Bus System configuration
- Space-efficient
- Matching extended battery and options cabinets
- Two-year onsite warranty
- Nationwide Service Program

**Best For:** Network closets, computer rooms, and small data center applications requiring a high level of available conditioned power.

**Contact:** (866) 261-1191 | [www.stacoenergy.com](http://www.stacoenergy.com)

## Staco Energy Products UniStar P Series 6-10kVA Rack & Tower UPS



Staco Energy Products UniStar P is an online, single-phase parallel redundant UPS available in 6kVA Rack/Universal and 6kVA, 8kVA, and 10kVA Tower models. The products are power- and runtime-scalable, up to 98% efficient, can be configured with up to four units in parallel, and are DSP-controlled. The units feature an LCD/LED mimic panel and easy-to-set user personalization, and they offer continuous power conditioning and smooth uninterrupted switching from utility to battery, handling wide fluctuations without going to battery. The units also have a very low rate of added harmonics, which protects system integrity.

- High input power factor and low current THD
- Flexible Rack/Universal and Tower models
- RS-232 port and optional communications slots
- Hot-swappable battery and matching external battery pack
- Industry-leading three-year warranty
- Nationwide Service Program

**Best For:** Network closets and small computer rooms requiring a high level of continuous available conditioned power.

**Contact:** (866) 261-1191 | [www.stacoenergy.com](http://www.stacoenergy.com)



# Alleviate Counterfeit Concerns

Careful Shopping & Research Are Required To Sidestep Potential Problems

**ALTHOUGH BUYING USED** or refurbished equipment can be a great way to get good gear while keeping costs down, it can also be a treacherous experience thanks to counterfeiting. It's been reported that fake chips, routers, network modules, and other hardware cost the IT industry as much as \$100 billion per year, but there are ways to protect yourself and your company from getting bogus goods.

**Keep a close eye out.** Hardware equipment is especially at risk for counterfeiting, especially that with recognizable, higher-margin brand names. Because of the goodwill built up by those companies, counterfeiters don't mind investing more money into making good fakes, according to Joyce Tang, a principal consultant with CompTIA Security+ ([www.comptia.org](http://www.comptia.org)). "It's not as easy to spot these fakes, particularly if they're

branded as refurbished and packaged in generic boxes or bulk plastic casings instead of original packaging," Tang says.

For those that are branded as new and are in their original packaging, Tang says, pay close attention to the quality of the printing and check for spelling errors. Typos and poor printing quality should be a hint.

**Know who you're dealing with.** Another reliable hedge against receiving counterfeit equipment is plain old legwork: Researching distributors and retailers can go a long way in keeping from getting burned.

"Make sure you're buying from a reputable company that's been in business awhile," says Joshua Levitt, managing director of UsedCisco.com. "That might seem obvious, but you'd be surprised at how many companies don't do that bit of due diligence.

Get references and make sure they stand behind their product, including warranties."

"Researching the reputation of the seller is [priority] No. 1," agrees Rob Holmes, CEO of IPCybercrime.com. "Most companies that sell refurbished equipment have an eBay store. The nice thing about those is that they're reputation-based. I've bought some refurb product for my business, and if a company has an eBay store, it gives you a chance to check out what customers think of them."

For the extra-cautious, however, steering clear of even a regulated but far from foolproof retail environment such as eBay might be worthwhile, says Levitt. "You can always report [counterfeit sales] to the authorities, but if you bought it on eBay or someplace similar, you're buying at your own risk to an extent," he says.

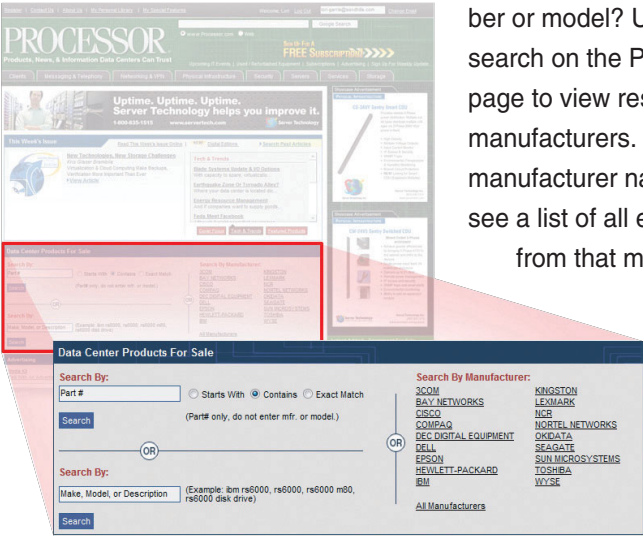
**Know the risks and recourses.** Unfortunately for customers, in many cases there's little recourse once a counterfeit component has been discovered, aside from junking it and being more careful next time. You can still request a refund from the vendor if the product's bogus status is detected early enough; if the vendor is an honest seller that unwittingly got stuck with bad gear, they will sometimes take the loss to keep your business.

However, says Tang, it may be months before you may run into mysterious stability issues and degraded performance from a counterfeit piece of equipment. "Often times, they still don't know it's a fake," she says. "With low-volume purchases, there's almost hardly any recourse, [but] with high-volume purchases where the source of the counterfeiter or a retailer of counterfeit products can be traced, the FBI may then get involved."

## USE PROCESSOR.COM TO FIND USED & REFURBISHED EQUIPMENT

Once you've made the decision to purchase used or refurbished equipment, finding the equipment you need is easy with Processor's online Data Center Products For Sale Database.

From Processor's home page ([www.processor.com](http://www.processor.com)), you can search for a specific part number, make, model, or description. Enter the information in the appropriate box and click Search. You'll see a list of available equipment. If you don't see the particular piece you're looking for, scroll to the bottom of the search results page to conduct a more detailed search. There, you can search by part number, model, price, location, and more.



Don't know the specific part number or model? Use the drill-down search on the Processor home page to view results from specific manufacturers. Simply click the manufacturer name, and you'll see a list of all equipment listings from that manufacturer.

Do you have excess equipment?  
*Post it for sale on Processor.com!*

On the Processor.com home page,  
click Used/Refurbished Equipment.



Choose  
Post A Free  
For-Sale Listing.

Follow the on-screen directions from there!





# #1 SOURCE for TECHNICAL COMPUTER FURNITURE



2012

2011

2010

2009

2008

2007

2006

2005

2004

2003

2002

2001

2000

1999

1998

1997

1996

1995

1994

1993

1992

1991



■ Command Centers

■ Control Stations

■ Relay Racks

■ PACS - Mobile Carts

■ Flat Panel Monitor Arms

■ Motorized Work Stations





888.222.7270 hergo.com

GSA Contract # G S - 29F-0133G

56-01 55th Avenue, Maspeth, New York 11378

Terms, specifications & appearance are subject to change without prior notice • © 2012 hergo®

Do you have excess equipment?

Post it for sale on Processor.com!

It's as easy as:

1. On the Processor.com home page, click Used/Refurbished Equipment.



2. Choose Post A Free For-Sale Listing.



3. Follow the on-screen directions from there!

(800) 247-4880 | www.Processor.com



Digital Brothers Group

770-931-7732

Fax 770-931-9416

www.dbgweb.com

salesp@dbgweb.com

DEC-Compaq-Cisco-Sun-SGI

AlphaServer GS160 Model 16

Base System for OpenVMS

- DY-160CG-AA
- One Alpha 21264 Processor 1224 MHz
- Four Quad Building Blocks
- One 14-Slot PCI Shelf
- OpenVMS Operating System License

Call or E-Mail For Pricing

ALSO AVAILABLE:

- Additional 1224 MHz CPU w/SMP
- Additional Memory
- Additional PCI Shelves
- Additional PCI Options

2 SYSTEMS IN STOCK!

Authorized COMPAQ Reseller

WE WILL BUY YOUR USED HARDWARE!

We Buy Used Cell Phones

& pay up to \$125 for each phone

Some phones have no value. See current purchase price list for individual model prices at [www.pacebutler.com](http://www.pacebutler.com)



We'll issue your check within 4 days!

GREAT FUNDRAISER!

For Every\* cell phone sold to PaceButler, \*excludes recycled phones

WE DONATE AN EDUCATIONAL BOOK!





5915 NW 23rd St. Oklahoma City, OK 73127

[www.pacebutler.com](http://www.pacebutler.com)

1-800-248-5360 • (405) 755-3131

SITUATION RED

Keep your systems operational.

Specializing in mature and end-of-life product support for computer systems and parts.

DMD offers world class management and mature product support.

FREE LAPTOP with first audit report.



processor@dmdsystems.com

602.307.0180



Information Technology Trading

Experience to find you the right technology solution.

AS/400 • RS/6000 • Sun Microsystems

Storage • Tape Backup

(877) 715-3686 | [www.itechtrading.com](http://www.itechtrading.com)

We Know You're Busy

That's why we make sure each issue of Processor provides comprehensive information in a quick, easy-to-read format.

It's all available both in print and online at [www.processor.com](http://www.processor.com).

PROCESSOR.

Call (800) 334-7458 to subscribe to Processor or go to [www.processor.com](http://www.processor.com) to read articles and view thousands of products online free of charge to qualified readers.



# Network With Your Peers At These IT Training & Association Meetings Across The United States

## JANUARY

### Designing & Deploying MS SharePoint 2010

Jan. 16  
Max Technical Training  
4900 Parkway Drive, Suite 160  
Mason, Ohio  
www.maxtrain.com

### AITP Atlanta

Jan. 19, 5:30 p.m.  
Crowne Plaza Ravinia  
4355 Ashford Dunwoody Road  
Atlanta, Ga.  
www.aitpatlanta.org

### ISSA Middle Tennessee

Jan. 20, 11:30 a.m. to 1 p.m.  
www.issa-midtn.org

### Implementing Microsoft SQL Server 2005 Database

Jan. 23, 9 a.m. to 4 p.m.  
Devore Technologies  
23240 Chagrin Blvd.  
Beachwood, Ohio  
www.devore.com

### ISSA Baltimore

Jan. 25  
Cyber Core Technologies  
6605 Business Parkway  
Elkridge, Md.  
www.issa-balt.org

### Core Data Access Development with Visual Studio 2005

Jan. 26, 9 a.m. to 4:30 p.m.  
Devore Technologies  
23240 Chagrin Blvd.  
Beachwood, Ohio  
www.devore.com

### ISSA Metro Atlanta

Jan. 27  
Atlanta, Ga.  
www.gaissa.org

## FEBRUARY

### Writing Queries Using Microsoft SQL Server 2008

Feb. 1, 9 a.m. to 4 p.m.  
Devore Technologies  
23240 Chagrin Blvd.  
Beachwood, Ohio  
www.devore.com

### Interconnecting Cisco Network Drives 1

Feb. 6  
Max Technical Training  
4900 Parkway Drive, Suite 160  
Mason, Ohio  
www.maxtrain.com

### Microsoft Project Server 2010 for Project Managers

Feb. 7  
Max Technical Training  
4900 Parkway Drive, Suite 160  
Mason, Ohio  
www.maxtrain.com

### AITP Wheeling

Feb. 8  
White Palace at Wheeling Park  
1801 National Road  
Wheeling, W.Va.  
aitp-wheeling.org

### AITP Washington, D.C.

Feb. 9  
Alfio's La Trattorio Restaurant  
4515 Willard Ave.  
Chevy Chase, Md.  
www.aitpdc.org

### ITIL Managing Across The Lifecycle

Feb. 10  
Max Technical Training  
4900 Parkway Drive, Suite 160  
Mason, Ohio  
www.maxtrain.com

### AITP Pittsburgh

Feb. 13, 5 to 8 p.m.  
Silvioni's Restaurant  
2125 Babcock Blvd.  
Pittsburgh, Pa.  
www.aitp-pgh.org

### Designing Applications for MS SharePoint 2010

Feb. 13  
Max Technical Training  
4900 Parkway Drive, Suite 160  
Mason, Ohio  
www.maxtrain.com

### Updating Windows Server 2008

Feb. 15  
Devore Technologies  
23240 Chagrin Blvd.  
Beachwood, Ohio  
www.devore.com

### ISSA Baltimore

Feb. 22  
Cyber Core Technologies  
6605 Business Parkway  
Elkridge, Md.  
www.issa-balt.org

### SPTechCon

Feb. 26-29  
Hilton San Francisco  
Union Square  
333 O'Farrell St.  
San Francisco, Calif.  
www.sptechcon.com

### Configuring & Troubleshooting Identity & Access Solutions with Windows Server

Feb. 29, 8:30 a.m.  
to 4:30 p.m.  
Devore Technologies  
23240 Chagrin Blvd.  
Beachwood, Ohio  
www.devore.com

## MARCH

### Interconnecting Cisco Network Drives 1

March 5  
Max Technical Training  
4900 Parkway Drive, Suite 160  
Mason, Ohio  
www.maxtrain.com

### AITP Washington, D.C.

March 8  
Alfio's La Trattorio Restaurant  
4515 Willard Ave.  
Chevy Chase, Md.  
www.aitpdc.org

### AITP Pittsburgh

March 12, 5 to 8 p.m.  
Silvioni's Restaurant  
2125 Babcock Blvd.  
Pittsburgh, Pa.  
www.aitp-pgh.org

### Implementing Microsoft SQL Server 2008 Database

March 12, 9 a.m. to 4 p.m.  
Devore Technologies  
23240 Chagrin Blvd.  
Beachwood, Ohio  
www.devore.com

### ITIL Managing Across the Lifecycle

March 12  
Max Technical Training  
4900 Parkway Drive,  
Suite 160  
Mason, Ohio  
www.maxtrain.com

### AITP Wheeling

March 14  
White Palace at Wheeling Park  
1801 National Road  
Wheeling, W.Va.  
aitp-wheeling.org

### Configuring & Administering Microsoft SharePoint 2010

March 19  
New Horizons Columbus  
6175 Shamrock Court  
Dublin, Ohio  
www.nhcolumbus.com

### Microsoft SharePoint Designer 2010 Level 1

March 22, 9 a.m. to 5 p.m.  
New Horizons Columbus  
6175 Shamrock Court  
Dublin, Ohio  
www.nhcolumbus.com

### Microsoft SharePoint Designer 2010 Level 1

March 26, 9 a.m.  
to 5 p.m.  
New Horizons Columbus  
6175 Shamrock Court  
Dublin, Ohio  
www.nhcolumbus.com

### SharePoint 2010 Certification Bootcamp for Administrators

March 26  
Max Technical Training  
4900 Parkway Drive, Suite 160  
Mason, Ohio  
www.maxtrain.com

### ISSA Baltimore

March 28  
Cyber Core Technologies  
6605 Business Parkway  
Elkridge, Md.  
www.issa-balt.org



APRIL

**Microsoft  
Project Server 2010  
for Project Managers**  
April 3  
Max Technical Training  
4900 Parkway Drive, Suite 160  
Mason, Ohio  
www.maxtrain.com

.....  
**AITP  
Pittsburgh**  
April 9, 5 to 8 p.m.  
Silvioni's Restaurant  
2125 Babcock Blvd.  
Pittsburgh, Pa.  
www.aitp-pgh.org

.....  
**AITP  
Wheeling**  
April 11  
White Palace  
at Wheeling Park  
1801 National Road  
Wheeling, W.Va.  
aitp-wheeling.org

.....  
**AITP  
Washington, D.C.**  
April 12  
Alfio's La Trattorio Restaurant  
4515 Willard Ave.  
Chevy Chase, Md.  
www.aitpdc.org

.....  
**ISSA  
Baltimore**  
April 25  
Cyber Core Technologies  
6605 Business Parkway  
Elkridge, Md.  
www.issa-balt.org

MAY

**AITP  
Washington, D.C.**  
May 10  
Alfio's La Trattorio Restaurant  
4515 Willard Ave.  
Chevy Chase, Md.  
www.aitpdc.org

.....  
**AITP Pittsburgh**  
May 14, 5 to 8 p.m.  
Silvioni's Restaurant  
2125 Babcock Blvd.  
Pittsburgh, Pa.  
www.aitp-pgh.org

**ISSA Baltimore**  
May 23  
Cyber Core Technologies  
6605 Business Parkway  
Elkridge, Md.  
www.issa-balt.org

JUNE

**AITP  
Pittsburgh**  
June 11, 5 to 8 p.m.  
Silvioni's Restaurant  
2125 Babcock Blvd.  
Pittsburgh, Pa.  
www.aitp-pgh.org

.....  
**AITP  
Washington, D.C.**  
June 14  
Alfio's La Trattorio Restaurant  
4515 Willard Ave.  
Chevy Chase, Md.  
www.aitpdc.org

.....  
**ISSA  
Baltimore**  
June 27  
Cyber Core Technologies  
6605 Business Parkway  
Elkridge, Md.  
www.issa-balt.org

JULY

**AITP  
Pittsburgh**  
July 9, 5 to 8 p.m.  
Silvioni's Restaurant  
2125 Babcock Blvd.  
Pittsburgh, Pa.  
www.aitp-pgh.org

.....  
**AITP  
Washington, D.C.**  
July 12  
Alfio's La Trattorio  
Restaurant  
4515 Willard Ave.  
Chevy Chase, Md.  
www.aitpdc.org

.....  
**ISSA  
Baltimore**  
July 25  
Cyber Core Technologies  
6605 Business Parkway  
Elkridge, Md.  
www.issa-balt.org

AUGUST

**AITP  
Washington, D.C.**  
Aug. 9  
Alfio's La Trattorio  
Restaurant  
4515 Willard Ave.  
Chevy Chase, Md.  
www.aitpdc.org

.....  
**AITP  
Pittsburgh**  
Aug. 13, 5 to 8 p.m.  
Silvioni's Restaurant  
2125 Babcock Blvd.  
Pittsburgh, Pa.  
www.aitp-pgh.org

.....  
**ISSA  
Baltimore**  
Aug. 22  
Cyber Core Technologies  
6605 Business Parkway  
Elkridge, Md.  
www.issa-balt.org

SEPTEMBER

**AITP Pittsburgh**  
Sept. 10, 5 to 8 p.m.  
Silvioni's Restaurant  
2125 Babcock Blvd.  
Pittsburgh, Pa.  
www.aitp-pgh.org

.....  
**AITP  
Washington, D.C.**  
Sept. 13  
Alfio's La Trattorio Restaurant  
4515 Willard Ave.  
Chevy Chase, Md.  
www.aitpdc.org

.....  
**ISSA Baltimore**  
Sept. 26  
Cyber Core Technologies  
6605 Business Parkway  
Elkridge, Md.  
www.issa-balt.org

OCTOBER

**AITP Pittsburgh**  
Oct. 8, 5 to 8 p.m.  
Silvioni's Restaurant  
2125 Babcock Blvd.  
Pittsburgh, Pa.  
www.aitp-pgh.org

**AITP Washington, D.C.**  
Oct. 11  
Alfio's La Trattorio Restaurant  
4515 Willard Ave.  
Chevy Chase, Md.  
www.aitpdc.org

.....  
**ISSA Baltimore**  
Oct. 24  
Cyber Core Technologies  
6605 Business Parkway  
Elkridge, Md.  
www.issa-balt.org

NOVEMBER

**AITP Washington, D.C.**  
Nov. 8  
Alfio's La Trattorio Restaurant  
4515 Willard Ave.  
Chevy Chase, Md.  
www.aitpdc.org

.....  
**AITP Pittsburgh**  
Nov. 12, 5 to 8 p.m.  
Silvioni's Restaurant  
2125 Babcock Blvd.  
Pittsburgh, Pa.  
www.aitp-pgh.org

.....  
**ISSA Baltimore**  
Nov. 28  
Cyber Core Technologies  
6605 Business Parkway  
Elkridge, Md.  
www.issa-balt.org

DECEMBER

**AITP Pittsburgh**  
Dec. 10, 5 to 8 p.m.  
Silvioni's Restaurant  
2125 Babcock Blvd.  
Pittsburgh, Pa.  
www.aitp-pgh.org

.....  
**AITP Washington, D.C.**  
Dec. 13  
Alfio's La Trattorio Restaurant  
4515 Willard Ave.  
Chevy Chase, Md.  
www.aitpdc.org

.....  
**ISSA Baltimore**  
Dec. 26  
Cyber Core Technologies  
6605 Business Parkway  
Elkridge, Md.  
www.issa-balt.org

Do you have an event you'd like to see listed?  
Send an email to [feedback@processor.com](mailto:feedback@processor.com).



PHYSICAL INFRASTRUCTURE




BayTech was founded in 1976 and, since the 1990s, has developed unique products for remote power management. The company uses printed circuit board instead of wires for a better, more resilient connection between the data center equipment and the receptacle. BayTech provides an extensive Web site with brochure downloads, warranty information, and reseller support and also offers evaluation units for data centers.

Products Sold:

- Power control, distribution, management, and metering
- Power transfer switches
- Console management and remote site management

(800) 523-2702 | www.baytech.net

PHYSICAL INFRASTRUCTURE



AVTECH Software, founded in 1988, is focused on making the monitoring and management of systems, servers, networks, and data center environments easier. AVTECH provides powerful, easy-to-use software and hardware that saves organizations time and money while improving operational efficiency and preparedness. AVTECH products use advanced alerting technologies to communicate critical status information and can perform automatic corrective actions.

Products Sold:

A full range of products that monitor the IT and facilities environment, including temperature, humidity, power, flood, room entry, and UPS

(888) 220-6700 | www.AVTECH.com

PHYSICAL INFRASTRUCTURE




Sensaphone has been designing and manufacturing remote monitoring systems for more than 25 years and has more than 300,000 of its products in use. Sensaphone's product lineup offers a full range of devices with a broad number of features and applications designed to monitor your entire infrastructure and alert you to changes. All product engineering functions, including hardware and software design and circuit board layout and assembly, are performed at the Sensaphone facility in Aston, Penn.

Products Sold:

Remote monitoring solutions that provide email and voice alarm notification for problems related to temperature, humidity, water detection, power failure, and more.

(877) 373-2700 | www.sensaphone.com

PHYSICAL INFRASTRUCTURE




Device Technologies has designed, manufactured, and sold specialty fasteners to a broad spectrum of industries since 1984. The company's product line serves a broad spectrum of industries, including banking/business machines, computer, data storage, and transportation. The company provides high-performance, economical products and continues to invest in R&D to enhance opportunities for its product and process technologies in compliance with ISO 9001 and AS 9100 standards.

Products Sold:

A complete line of cable and fiber protection/management products including grommet edging and trim, sleeving and wrap, fiber modules and enclosure seals.

(800) 669-9682 | www.devicetech.com

PHYSICAL INFRASTRUCTURE



ITWatchDogs manufactures environmental monitors that help prevent downtime from climate- and power-related issues. Its Web-enabled monitors let users keep an eye on remote conditions from a secure Web interface and receive SNMP, email, SMS and voice call alerts when specified alarm thresholds are exceeded for external factors, including temperature, humidity, airflow, power failure, smoke, water detection, and more.

Products Sold:

- Climate monitors
- Digital and analog sensors
- Power monitors
- IP surveillance cameras

(512) 257-1462 | sales@itwatchdogs.com | www.itwatchdogs.com

PHYSICAL INFRASTRUCTURE




Staco Energy was founded in 1937 and is one of the longest-lasting innovators of power products and services in the world. Our recent innovations have created the foundation for entry into the SMB data center marketplace through pioneered design and expertise. We are committed to providing you with the best tailored power solutions for your needs.

Products Sold:

A full line of UPS products, including our new FirstLine P 80 – 125kVA UPS, FirstLine PL 10 – 100kVA UPS, FirstLine BMS, and related accessories and services.

(866) 261-1191 | www.stacoenergy.com

PHYSICAL INFRASTRUCTURE



PDUsDirect.com is a Master Distributor of select Server Technology PDUs for server and networked environments. PDUs Direct's basic, metered, and switched Rack PDUs provide local and remote power management, power monitoring, and environmental monitoring. We pride ourselves in offering industrial-grade quality products at the lowest prices, with the fastest shipping (most orders shipped within 24 hours) and simplest purchase process. We are the Power Behind the Business.

Products Sold:

A complete line of metered and basic PDUs, and 20A switched PDUs.

(888) 751-7387 | pduddirect.com

PHYSICAL INFRASTRUCTURE



Upsite Technologies was founded in 2001 to address data center needs for products and solutions reaching far beyond standard engineering and consulting offerings. The company innovates elegantly engineered products specifically designed to maximize data center airflow efficiency, improve PUE, and increase heat density. Upsite designs and manufactures the LOK family of products, which provides superior sealing, maximum energy savings, and the best protection available for your IT equipment.

Products Sold:

- KoldLok Grommets
- HotLok Temperature Strips
- HotLok Blanking Panels

(505) 982-7800 | www.upsite.com

PHYSICAL INFRASTRUCTURE




Based in New York City, Hergo Ergonomic Support Systems is an independent designer and manufacturer of enclosure cabinet solutions, technical computer furniture, and modular racking systems. The company's products are designed to promote organization in the workspace and to increase the productivity of computers, peripherals, and communications equipment. Hergo is known for its high-quality products and superior customer service.

Products Sold:

- Racks
- Computer desks
- Enclosures/cabinets
- Cable management
- Motorized workstations
- Power management
- Flat-panel arms

(888) 222-7270 | www.hergo.com

PHYSICAL INFRASTRUCTURE




Rackmount Solutions' mission is to listen to the IT engineer's specific needs and deliver superb-quality, high-performance products through continuous product innovation and operational excellence. We pride ourselves in providing quality customer service, products that fit your IT requirements, and solid value for your money.

Products Sold:

- Wallmount and server racks and cabinets, including sound proof, air conditioned, and large cable bundle
- Desktop/tabletop portable racks
- Shockmount shipping cases
- Bulk cable

(866) 207-6631 | www.rackmountsolutions.net

PHYSICAL INFRASTRUCTURE



Server Technology is committed to the PDU market with the largest group of engineers dedicated to power distribution and other solutions within the equipment cabinet. Advancements in device power monitoring help data centers monitor and improve their efficiency, and continuous research and development is fueled by companies that look to Server Technology for their custom cabinet power solutions.

Products Sold:

A complete line of cabinet PDUs, including Per Outlet Power Sensing (POPS), Rack Mount Fail-Safe Transfer Switch, Console Port access with remote power management, Switched, Smart, Metered, Basic, and -48 VDC

(800) 835-1515 | www.servertech.com

STORAGE



The OCZ Technology Group has been offering enterprise class solutions for many years and OCZe (OCZ enterprise) represents the company's offerings that cater specifically to the unique needs of both Enterprise and OEM clients. These innovative products are designed and manufactured to solve problems and deliver improved total cost of ownership (TCO) to clients requiring enterprise class solutions.

Products Sold:

- Solid State Drives
- Power Management

(408) 733-8400 | oemsales@occenterprise.com



STORAGE

WeBuyUsedTape.net

WeBuyUsedTape has been in the business of purchasing new, used, excess, and surplus magnetic media for more than 35 years. Our regulation-approved, secure data eradication processes and environmentally friendly disposal programs give organizations a safe and economic incentive for recycling used media. Customer service is one of our top priorities, backed by helpful, knowledgeable, and efficient team members. Obtain a no-obligation, confidential quote on your tape media today.

Services Offered:

Tape media buyback, secure data eradication, media disposal, and recycling

(800) 821-1782 | www.WeBuyUsedTape.net

STORAGE



Founded in 1991, Aberdeen is a leading manufacturer of servers and storage options for IT departments. Aberdeen products can be found in many of today's high-tech corporations, as well as government agencies, hospitals, and universities. Aberdeen prides itself on unmatched customer service, open and honest communications, long-term commitments to working relationships, and personal and professional integrity.

Products Sold:

- Components/parts
- Servers (barebones, custom, rackmount, and storage)
- Software
- Storage (DAS, iSCSI SAN, JBOD, NAS, SAN)

(800) 500-9526 | www.aberdeeninc.com

SECURITY



Milton Security Group LLC is at the forefront of new developments in network security technology that provide the framework in the most demanding security environments worldwide. We guide our customers to success in an information-driven world by supplying exceptional customer service, delivering top-notch products and engaging partner programs. Milton Security Group is a Veteran-Owned Small Business security company with a consulting practice.

Products Sold:

- Access control and security scanning
- Network management

(888) 674-9001 | www.miltonsecurity.com

SERVERS



Chenbro is a leader in enclosure solutions, selling its products primarily to system integrators and OEM and channel partners. The company's extensive research and development efforts help it to keep its competitive edge and maintain market leadership, with special focus on thermal, EMI, and acoustic solutions. Taiwan-based Chenbro has offices in the United States, UK, The Netherlands, and China.

Products Sold:

- A comprehensive line of PC chassis, server/workstation chassis, rackmount chassis, and HDD enclosures.

(909) 947-3200 | www.chenbro.com

SERVERS



Supermicro® (NASDAQ: SMCI), the leading innovator in high-performance, high-efficiency server technology, is a premier provider of advanced server Building Block Solutions® for enterprise IT, data center, cloud computing, HPC, and embedded systems worldwide. Supermicro is committed to protecting the environment through its "We Keep IT Green®" initiative by providing customers with the most energy-efficient, environmentally-friendly solutions available on the market.

Products Sold:

- Servers
- Network switches
- GPU servers
- Motherboards
- Storage solutions
- Embedded
- Chassis
- Blade servers

(408) 503-8000 | www.supermicro.com

EQUIPMENT DEALER



At Information Technology Trading, our goal is to help you acquire the right hardware or software solution. We specialize in purchasing and reselling data-processing equipment and have more than 21 years combined experience. We provide services and system upgrades, DASD, communication, and memory. We're also an outlet for off-lease portfolios.

Products Sold:

- AS400, Advanced System/36, R/S6000, ES/9000, and PC systems (including lease and rental)
- CPUs, memory, disks, tapes, displays, and controllers
- Services, including system design and installation, maintenance, and buyback of existing hardware

(877) 715-3686 | www.itechtrading.com

EQUIPMENT DEALER



- PaceButler buys used cell phones.
- In business since 1987
- Redeploy your used phones after upgrade
- Donation option – directly to the non-profit of your choice
- Dedicated to customer satisfaction
  - A+ Rating with the Better Business Bureau
  - Payment issued in four days
- Dedicated to employee development
  - Book reading program
  - Health and fitness programs

Products Sold:

We buy used cell phones & PDAs, including Apple, LG, Blackberry, HTC, Motorola, Nextel, Nokia, PalmOne & Samsung.

(800) 248-5360 | www.pacebutler.com

EQUIPMENT DEALER



Digiliant is a Michigan-based company that was founded on more than 17 years of experience of computer hardware support and custom server designs to provide Network Storage Solutions to meet the needs of today's growing businesses. Our Network Attached Storage (NAS) systems and iSCSI SAN solutions provide a much more simple, yet powerful platform to meet the high demands of File Serving and Data Storage.

Products Sold:

- Chasses from towers to rack mount units from 1U all the way to 8U, which allows for capacities of up to 243 Terabytes of data storage running Microsoft Windows Storage Server 2008 R2 and Linux Solutions.

(800) 306-2199 | www.digiliant.com/pcm

EQUIPMENT DEALER



Since its inception in February 2009, tech company NordStar Group (NSG) has established itself as a provider of IT products and solutions that are designed to meet a variety of data center needs. With its team of experienced and knowledgeable technicians and salespeople, NSG provides SMEs with high-quality service, affordable pricing, and industry-leading new, refurbished and legacy products from manufacturers such as HP, Sun/Oracle, Cisco, IBM, SonicWall, and Dell.

Products Sold:

- Servers
- Workstations
- Network Equipment
- Storage
- Data Protection Solutions
- Managed Services

(832) 467-0000 | www.nordstargroup.com

CLIENTS



Maryland-based dtSearch started research and development in text retrieval in 1988. The company is known for speedy adoption of new programming standards, OSes, and file types. Plus, it has a flexible licensing model. Typical corporate use of dtSearch includes general information retrieval, Internet and intranet site searching, and email archiving and email filtering.

Products Sold:

Text retrieval products, including:

- Desktop With Spider
- Web With Spider
- Network With Spider
- Engine For Win & .NET
- Publish For CD/DVDs
- Engine For Linux

(800) 483-4637 | www.dtsearch.com

SERVICES



CBT XPress, a Division of CBT Campus, LLC, is the internationally recognized premier provider of Information Technology Certification Boot Camps.

Our acclaimed IT Boot Camp training offers you the opportunity to attend our classes in beautiful Tampa Bay, Florida or schedule our instructors to come directly to your organization! Either way, you will be able to attend class and sit for your certification exams all in one location.

Through our partnerships with the IT Industry's leading technology developers, learning content publishers and testing centers, we have developed certification classroom instruction that is second to none!

1-877-TRAINING (872-4646) | http://www.cbtxpress.com

SERVICES



mindSHIFT is one of the largest IT outsourcing and cloud managed services providers, serving small and mid-size businesses for more than 10 years. At mindSHIFT, we're about keeping your IT systems up and running, providing personal attention and making you more productive. We're big enough to offer the facilities, services and expertise you expect, but small enough to provide the support and attention you demand. Learn more at www.mindSHIFT.com.

571-643-7000 | www.mindshift.com



CHENBRO

# 2U Modular Server Chassis-RM235

## Maximum Configuration Flexibility



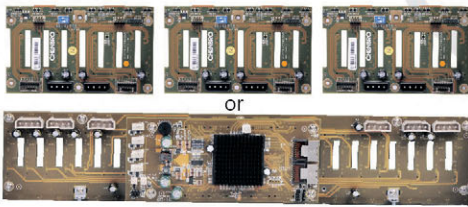
RM23508



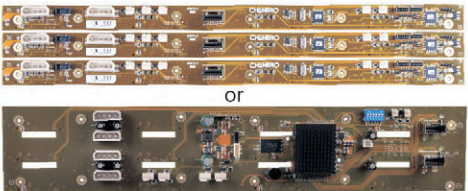
RM23512



RM23524



24-bay 2.5" HDD cage  
6Gb/s Mini-SAS backplane or expander backplane



12-bay 3.5" HDD cage  
6Gb/s Mini-SAS backplane or expander backplane



8-bay 3.5" HDD cage  
6Gb/s Mini-SAS backplane



C2W PSU

**Chenbro Micom (USA) Inc.**  
Add: 2888 E. Spruce St. Ontario, CA91761 USA  
Tel : 1-909-947-3200 Fax : 1-909-947-4300  
E-mail : [info@chenbro.com](mailto:info@chenbro.com)  
[http : //www.chenbro.com](http://www.chenbro.com)

